REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

HEALTH

OF THE

CITY OF BIRMINGHAM

FOR THE YEAR **1908.**

BIRMINGHAM
HUDSON AND SON, PRINTERS, EDMUND STREET AND LIVERY STREET.

Health Department,
Council House, Birmingham.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

Gentlemen,

Judged by the statistics given in the following report the year 1908 was one of the healthiest in the annals of the City.

The general death-rate of 15·9 per 1,000 was the lowest ever recorded in Birmingham. Such a death-rate, following as it does with great uniformity on those of the three previous years, gives reason to hope that real progress has recently been made.

Birmingham's population has to such an exceptional extent overflowed its boundaries that even the above favourable statement is somewhat misleading, particularly for comparative purposes. The death-rate during 1908, for what has been called greater Birmingham, was 14·1 per 1,000, as compared with 15·9 in the City, and with 17·7 in Glasgow, 19·2 in Liverpool, and 18·2 in Manchester.

The more highly infectious diseases were all, with the exception of whooping cough, less prevalent than they have usually been during the preceding decade. The rate of infant mortality, notwithstanding the climatic conditions of the summer, constitutes a record, but although a record it is one which is far from being satisfactory.

The poverty, want of cleanliness, ignorance, carelessness, or drunkenness under which many people live constitutes the greatest hindrance to progress. It is very largely from betterment in these directions that further progress in healthiness must be expected. Many of these subjects have so important a bearing on health that the Public Health Authority cannot well neglect any opportunity of encouraging work which has for its object the amelioration of these conditions. In former days

public health administration was thought to end with the provision of good water, good drainage, scavenging, and good house and workshop conditions; we now know that it extends over a very much wider field.

Much time has been devoted during the year to measures which will tend to check the prevalence of tuberculosis. In this connection may be mentioned (1) the opening of the Birmingham Municipal Sanatorium on the Cotswolds—the first rate-supported institution in this country; (2) the measures for providing a milk supply free from the living infection of tuberculosis.

Similarly the important subject of infant mortality has received considerable attention, and for this purpose Dr. Jessie Duncan was appointed to devote her whole time in one of the districts where the infant death-rate is highest.

The staff of the Health Department has worked with that energy and harmony which is so much needed in carrying out the multifarious duties which are now cast on them, and I wish to thank them for their unstinted help on all occasions.

I am, Gentlemen.

Your obedient servant,

JOHN ROBERTSON.

POPULATION.

Population.

The Registrar-General estimates that the population of Birmingham on June 30th, 1908, was 558,357—an increase of 5,202 over the estimated population in 1907. For reasons elsewhere given, it is probable that this estimate is between 25,000 and 30,000 in excess of the actual population of the City.

Since the taking of the last census in 1901 great changes have occurred in the distribution of the population in Birmingham, and in order that our public health statistics may be quite reliable, it is much to be desired that a more frequent census should be taken. Probably all purposes would be met by a more or less incomplete census at the middle period between the present decennial enumerations.

Occupied Houses.

At the time of taking the last census it was found that there were 4·8 persons per "inhabited" house in Birmingham. Every year the Overseers supply the Health Department with a statement of the actual number of "occupied" houses in the City, and on the next page will be found the number in each Ward and in the whole City for a series of years.

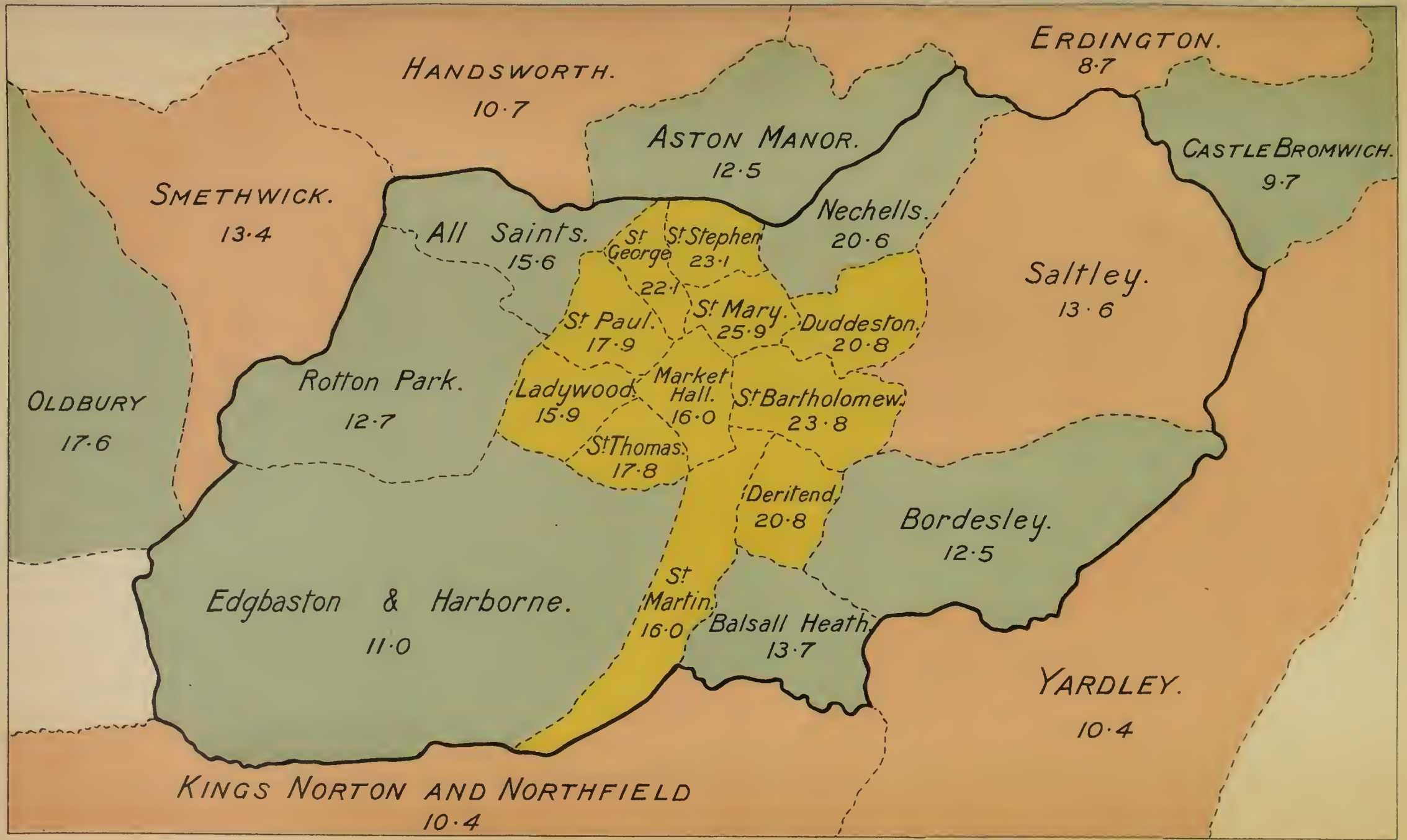
The increase from year to year in the number of occupied houses has been irregular. The figures on the next page show for each year the percentage increase or decrease in the number of occupied houses, as compared with the year immediately preceding, and it will be seen that during 1908 there was an actual decrease on the figures for 1907, and that in 1907 the increase was only ·15 per cent. over the preceding year. From the figures it will also be noted that during the earlier part of the period under review there was a percentage increase each year of approximately 2 per cent., while during the period since 1901 the increase has been somewhat less than ½ per cent.

Migration to Suburbs.

Assuming that on an average the same number of people were living in each occupied house in 1908 as in the census year (1901), the population for 1908 would be 531,572 persons—that is, 26,785 less than estimated by the Registrar-General's method. During the past twenty years, and particularly during the past seven or eight, a great and very desirable movement of the population outwards has been taking place, and consequently the central parts of the City have been decreasing in population at relatively a very rapid rate. The portion coloured yellow in the accompanying chart represents an area of 2,750 acres, or nearly one-fourth of the whole City, which, when compared with the population in 1896, has become depopulated to the extent of 27,792 persons, or 11·7 per cent.

OCCUPIED HOUSES.

Ward.	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Increase or Decrease in 13 years.
Rotton Park ...	8354	8615	8739	9079	9442	10199	10041	10215	10383	10573	10761	11065	11028	+ 2674
All Saints' ...	7827	7853	8075	8549	9028	8847	8939	8996	9195	9024	9084	9393	9311	+ 1484
Ladywood ...	5703	5692	5605	5639	5645	5627	5634	5662	5669	5570	5539	5564	5561	- 142
St. Paul's ...	3762	3718	3688	3650	3630	3187	3316	3318	3341	3314	3217	3088	3009	- 753
St. George's ...	4577	4572	4585	4670	4632	4572	4623	4618	4621	4604	4627	4543	4401	- 176
St. Stephen's ...	4749	4741	4864	4913	4882	4963	4952	4962	4930	4861	4809	4859	4683	- 66
St. Mary's ...	3174	3262	3205	3230	3237	3308	3325	3378	3297	3233	2888	2783	2480	- 694
St. Barth'l'mew's	5195	5134	5119	5315	5326	5297	5301	5241	5089	4884	4865	4545	4489	- 706
Market Hall ...	2429	2363	2362	2372	2335	2109	2094	2075	2005	1980	2068	1954	1929	- 500
St. Thomas' ...	4050	4056	4030	4088	4170	4201	4067	4061	4106	4062	3958	3799	3816	- 234
St. Martin's ...	5150	5163	5170	5216	5260	5220	5250	5233	5331	5373	5213	5254	5109	- 41
Edgb'n & Harb'e	5734	5863	6056	6289	6373	6386	6473	6496	6491	6432	6801	6891	6825	+ 1091
Deritend ...	5269	5305	5415	5370	5248	5232	5194	5101	5118	5026	5036	4911	4819	- 450
Bordesley ...	9412	10231	10869	11179	11514	11703	11907	12168	11905	12519	12809	13069	13280	+ 3868
Duddeston ...	4795	4921	5240	5082	5132	5060	5026	4977	4958	4946	4847	4873	4688	- 107
Nechells ...	6757	6771	6869	7036	7021	7012	6955	7023	6947	6841	7020	6732	6821	+ 64
Balsall Heath ...	8200	8250	8419	8547	8650	8700	8750	8825	9000	9061	9183	9029	9027	+ 827
Saltley	5720	6188	6764	7242	8053	8340	8715	8960	9223	9333	10019	10557	10634	+ 4914
City ...	100857	102698	105074	107466	109578	109963	110562	111309	111609	111636	112744	112909	111910	+11053
Increase or Decrease on previous year ...		+ 1841	+ 2376	+ 2392	+ 2112	+ 385	+ 599	+ 747	+ 300	+ 27	+ 1108	+ 165	- 999	
Percentage ...		+ 1·83	+ 2·32	+ 2·28	+ 1·97	+ 0·35	+ 0·55	+ 0·68	+ 0·27	+ 0·02	+ 0·99	+ 0·15	- 0·88	


Handsworth.
10·7
Erdington.
8·7
Aston Manor.
12·5
Castle Bromwich.
9·7
Smethwick.
13·4
All Saints.
15·6
St George
22·1
St Stephen
23·1
Nechells.
20·6
Saltley.
13·6
St Paul.
17·9
St Mary.
25·9
Duddeston.
20·8
Oldbury
17·6
Rotton Park.
12·7
Ladywood.
15·9
Market Hall.
16·0
St Bartholomew.
23·8
St Thomas.
17·8
Deritend.
20·8
Bordesley.
12·5
Edgbaston & Harborne.
11·0
St Martin.
16·0
Balsall Heath.
13·7
Yardley.
10·4
Kings Norton and Northfield
10·4
Population Decreasing
Increasing Moderately
Increasing Rapidly

Migration to suburbs—(*continued*).

To a less extent other districts are falling into line with these central areas, and such districts are coloured blue on the chart. The two districts in which there is yet room for expansion within the City boundary are increasing still at a rapid rate, and these are respectively the areas in the extreme East and extreme West ends of the City.

The cause of this decrease in the population in the central area of Birmingham is not difficult of explanation, nor is it difficult to ascertain exactly where the people have gone to. In the first instance, it must be remembered that the areas mainly affected are occupied by back-to-back courtyard houses, with all the inconveniences and disabilities surrounding such dwellings. Fortunately, many of the occupiers of these houses are now demanding better conditions, and are therefore going to the nearest suburbs where cottage property is being provided. To a certain extent such occupants are being driven out by public improvements and by the pulling down of houses in the centre of the City in order to build works and offices. In addition to these two causes, there has been within recent years a great improvement in the means of transit. Altogether, the movement towards the suburbs is one which ought to be encouraged, but, unfortunately, the encouragement of such a procedure means the development of surrounding towns, entirely due to the overflow of the Birmingham population.

Since 1891 the City population has increased by 16·8 per cent. But the overflow from Birmingham has caused the two districts lying to the South of the City—King's Norton and Yardley—to increase in the former instance at the rate of 178 per cent., and in the latter at the rate of 237 per cent. Similarly on the North, the Erdington district has increased by 197 per cent., and Handsworth by 108 per cent. It is probable that with the improved education of the masses of the people and the clearer conception of what are wholesome housing conditions, together with the greater facilities now offered in the way of tram and train services, this migration from the City to the suburbs will continue.

From a purely public health point of view it is extremely unfortunate that at present the Birmingham population should have a multiplicity of governing authorities, and it is greatly to be hoped that some means may be taken to prevent the overlapping of authorities, which has been so harmful in London, ever being allowed to occur in a provincial town. There is a fairly well defined area for any town which depends mainly on the town as a commercial centre. Modern electric trams have now made it convenient to reside anywhere within a five-mile circle from the centre of the town, whereas

formerly two and a half to three miles was the outside limit. This five-mile radius may therefore be taken as a convenient guide to the proportions which a modern town should assume.

Populations and areas of wards.

I have again to thank the Overseers of the different parishes for kindly supplying me with the number of occupied houses in each Ward of the City. Based on these figures, the various Ward populations and persons per acre, excluding the inmates of large public institutions, are estimated to be as follows:—

WARD.	Area in Acres.	Population 1908.	Persons per Acre.
Rotton Park	1,233	50,618	41·1
All Saints'	532	43,575	81·9
Ladywood	249	24,802	99·6
St. Paul's	264	14,112	53·5
St. George's	120	19,452	162·1
St. Stephen's	169	22,432	132·7
St. Mary's	184	11,929	64·8
St. Bartholomew's ...	313	22,759	72·7
Market Hall	229	8,815	38·5
St. Thomas'	179	17,439	97·4
St. Martin's	468	23,450	50·1
Edgbaston and Harborne	3,407	32,896	9·7
Deritend	279	22,746	81·5
Bordesley	1,387	62,018	44·7
Duddeston	299	22,174	74·2
Nechells	512	32,741	63·9
Balsall Heath	463	40,260	87·0
Saltley	2,352	53,914	22·9

The area of the whole City is 12,639 acres, and, taking the estimated population as 558,357, there would be on an average of 44·2 persons per acre.

MARRIAGES.

Marriage rate.

The number of marriages recorded during 1908 was 4,714—a decrease of 440 on the number for the previous year. The number of persons married is equal to a rate of 16·9 per 1,000 of the population, as compared with 18·7 in 1907 and 18·1 in 1906. The fluctuations in the marriage rate during the last ten years are shown in the statement following:—

	Marriage Rate per 1,000.
1899	20·8
1900	18·9
1901	18·8
1902	19·1
1903	18·4
1904	17·2
1905	17·5
1906	18·1
1907	18·7
1908	16·9

BIRTHS.

There were 16,141 children born in Birmingham in 1908, as compared with 15,619 in 1907, 16,016 in 1906, and 15,795 in 1905. The rate per 1,000 of the population was therefore 28·4, as against 28·3 per 1,000 in 1907, 29·3 in 1906, and 29·2 in 1905. In the towns having a population of over 200,000 persons the birth rate during 1908 was as follows:— Birth rate.

	Birth-rate per 1,000.
London	25·2
Liverpool	31·7
Manchester	29·1
Leeds	24·8
Sheffield	30·7
Bristol	23·1
West Ham	28·8
Bradford	20·2
Newcastle	29·7
Hull	30·2
Nottingham	26·6
Leicester	23·4
Salford	29·6
Portsmouth	28·4

The birth rate during 1908 is one of the lowest on record in Birmingham, that in the year 1907—28·3 per 1,000—being actually the lowest. It is unfortunately too evident that in recent years the birth rate has fallen almost everywhere. In England and Wales last year it was 26·5 per 1,000, this rate being ·2 above that for 1907 and 1·6 per 1,000 below the average of the preceding ten years. The figures for Birmingham and for England and Wales correspond closely. In both instances the birth rate in 1907 was the lowest on record, and in both instances the rate during 1908 showed only a negligible increase over that for the previous year.

To a certain extent the great reduction which has been taking place in the birth rate has had an influence on the age distribution of the population, and to this must be attributed a certain part of the reduction in the general death rate. The extent of this change may be seen from the following figures, showing the number of children under five years of age per million of the population in Birmingham and per million of the population in England and Wales at each census period:—

CHILDREN UNDER 5 YEARS, PER MILLION.

Census.	Birmingham.	England and Wales.
1871	140,564 ...	135,225
1881	144,830 ...	135,551
1891	122,479 ...	122,523
1901	120,340 ...	114,262

Causes of reduction in birth rate

The Registrar-General has pointed out that the reduction in the birth rate is due to many causes, one of which is the altered age at marriage of the women. This is shown in the following table for England and Wales:—

Of the MARRIED WOMEN aged 15—45 years, the proportion per cent. at four age groups:—

Census.	Aged 15-20.	Aged 20-25.	Aged 25-35.	Aged 35-45.
1871 ...	1·3	13·9	45·5	39·3
1881 ...	1·1	13·7	45·6	39·6
1891 ...	0·9	12·8	46·0	40·3
1901 ...	0·7	11·8	46·8	40·7

He also points out that since 1876 there has been a fall in the birth rate of nearly 25 per cent., while during the same period the fertility of married women (based on the number of legitimate births to wives of conceptive ages) showed a decrease of 27 per cent. Put in another way, if these wives had continued at the same fertility rate as in 1876 to 1880, there would have been in the year 1907 330,147 more children born than actually were born.

At the last census, 1900-1902, the fertility of English wives was lower than that in any European country except France. In the case of France, according to the annual report for 1907 by M. Lucien March, Le Chef de la Statistique Générale de la France, the excess of deaths over births in that year was no less than 19,920, or 5 per 10,000 of the population. In Birmingham during 1908 there was an excess of births over deaths of 7,149—equal to 125 per 10,000 of the population. In Germany the excess of births over deaths has been increasing during recent years, and in 1906 there was an increase of no less than 150 per 10,000 of the population, while in the whole of England in 1908 it was 119 per 10,000.

The point of importance which it is desirable to emphasise is that the death rate cannot continue to decline indefinitely, and that the fall in the birth rate, if it continues as great as it has been in recent years, must soon cause the total population of this country to be a declining one.

Birth rates in wards.

As usual, the birth rate has varied very much in different parts of the City, and these variations are set out in the table below, where the rates are shown for the different Wards since the year 1904 :—

BIRTH-RATES IN WARDS.

	1904.	1905.	1906.	1907.	1908.
Rotton Park	31·7	28·3	28·7	25·2	27·6
All Saints'	32·5	32·1	31·6	30·8	31·7
Ladywood	32·5	28·9	30·5	29·4	30·5
St. Paul's	27·6	26·1	26·1	24·5	26·5
St. George's	37·7	33·9	34·9	34·3	35·8
St. Stephen's	37·8	34·8	36·9	35·0	35·5
St. Mary's	26·9	27·2	29·9	27·6	32·7
St. Bartholomew's ...	37·4	34·6	33·8	35·8	34·0
Market Hall	21·6	23·8	19·6	16·9	16·3
St. Thomas'	31·6	29·5	30·8	32·8	32·6
St. Martin's	28·7	24·4	26·0	25·9	26·4
Edgbaston and Harborne	19·4	19·7	18·6	19·2	20·6
Deritend	35·3	34·9	34·8	34·3	35·6
Bordesley	30·8	27·5	26·6	27·2	26·4
Duddeston	37·2	33·8	37·3	34·5	36·8
Nechells	36·3	36·3	36·1	36·4	38·1
Balsall Heath	27·1	27·0	24·3	25·8	26·9
Saltley	35·0	32·2	32·6	29·3	31·7

The lowest birth rates were in Market Hall, and Edgbaston and Harborne, while the highest were in Nechells and Duddeston Wards. It will be seen that the rates for the different Wards range from 16·3 to 38·1, and that the highest rates occur in the poorest districts of the City.

DEATHS.

Death rate.

The deaths of 8,992 persons were registered as properly belonging to Birmingham during the year 1908, as compared with 8,879 in the previous year, and 9,172 in 1906.

The death rate for the City was 15·9 per 1,000. It will be seen from the following figures that this is the lowest rate ever recorded in the City, and, as already pointed out, it follows on three preceding years, each of which showed a low death rate.

The death rates recorded since the year 1874 are shown below :—

	Death-rate per 1,000.	
1874	26·8	
1875	26·3	
1876	22·4	Average 24·9
1877	23·9	
1878	25·2	
1879	21·8	
1880	20·5	
1881	19·8	Average 20·9
1882	20·8	
1883	21·4	
1884	21·6	
1885	19·8	
1886	20·5	Average 20·2
1887	20·4	
1888	18·6	
1889	19·7	
1890	22·0	
1891	21·7	Average 21·0
1892	20·0	
1893	21·5	
1894	18·2	
1895	19·9	
1896	20·4	Average 19·8
1897	21·1	
1898	19·5	
1899	20·5	
1900	21·0	
1901	19·9	Average 19·3
1902	18·0	
1903	17·2	
1904	19·3	
1905	16·1	
1906	16·8	Average 16·8
1907	16·1	
1908	15·9	

Death rate in England and Wales.

Comparative figures as to death rates for England and Wales and Birmingham during the past 38 years are given below :—

	Birmingham.	England and Wales.
1871—1875	25·2	22·0
1876—1880	22·8	20·8
1881—1885	20·7	19·4
1886—1890	20·2	18·9
1891—1895	20·3	18·7
1896—1900	20·5	17·7
1901—1905	18·1	16·0
1906	16·8	15·4
1907	16·1	15·0
1908	15·9	14·7

It will be seen that last year the mortality rate in England and Wales, like that in Birmingham, was a low one; indeed, it was lower than in any other year on record.

Death rates in large towns.

The death rates in the largest towns are shown in the next table, as well as the average death rate in each of them during the preceding ten years.

DEATH-RATES IN TOWNS.

(FROM ANNUAL SUMMARY OF REGISTRAR-GENERAL.)

	1904.	1905.	1906.	1907.	1908.	Ten years 1898-1907.
London ...	16·1	15·1	15·1	14·6	**13·8**	16·7
Liverpool ...	22·6	19·6	20·6	19·0	**19·2**	21·9
Manchester	21·3	18·0	19·2	18·1	**18·2**	21·0
Birmingham	19·9	16·2	16·8	16·2	**15·9**	18·9
Leeds ...	18·0	15·2	15·6	15·3	**15·3**	17·7
Sheffield ...	16·8	17·0	16·4	17·1	**15·8**	18·7
Bristol ...	15·6	14·6	14·5	13·2	**13·6**	15·8
West Ham	16·5	14·8	15·7	14·6	**13·9**	16·9
Bradford ...	17·6	15·2	16·1	14·8	**15·5**	16·8
Newcastle ...	19·4	16·8	17·1	15·9	**16·0**	19·7
Hull ...	18·6	16·3	16·9	16·1	**16·2**	17·9
Nottingham	17·7	16·5	16·1	17·5	**15·2**	17·8
Leicester ...	14·5	13·3	14·3	12·7	**13·0**	15·4
Salford ...	21·2	16·9	18·3	17·7	**17·8**	20·6
Portsmouth	16·9	16·6	14·9	16·0	**13·8**	16·9
Cardiff ...	14·8	13·4	14·0	15·0	**13·0**	15·6
Bolton ...	16·9	15·1	15·2	16·8	**15·4**	17·5
Croydon ...	13·8	12·5	13·4	12·4	**12·8**	13·4
Sunderland	19·5	18·6	18·6	19·2	**17·7**	20·3
Willesden ...	11·2	11·6	11·6	11·5	**10·5**	12·3

Corrected death rates.

In his Annual Summary the Registrar-General gives the following figures as the crude and corrected death rates for the largest towns:—

	Crude Death-rate.	Corrected Death-rate.
Willesden	10·5	11·3
Croydon	12·8	13·1
Leicester	13·0	13·8
Bristol	13·6	13·9
Cardiff	13·0	14·1
Portsmouth	13·8	14·1
London	13·8	14·5
West Ham	13·9	14·8
Nottingham	15·2	16·0
Hull	16·2	16·6
Leeds	15·3	16·7
Sheffield	15·8	17·1
Birmingham	15·9	17·1
Bradford	15·5	17·2
Newcastle...	16·0	17·2
Bolton	15·4	17·5
Sunderland	17·7	18·3
Salford	17·8	19·7
Manchester	18·2	20·3
Liverpool	19·2	20·5

Death rates in wards.

The mortality in each Ward in Birmingham during the past five years has been as follows:—

DEATH-RATES IN WARDS.

Wards.	Death-rate per 1000. 1904.	1905.	1906.	1907.	1908.	Mean of 5 years.
Rotton Park ...	17·2	14·0	13·5	13·3	**12·7**	14·1
All Saints' ...	17·9	14·6	17·1	14·1	**15·6**	15·9
Ladywood ...	20·1	16·6	17·0	15·7	**15·9**	17·1
St. Paul's... ...	21·5	15·7	18·6	17·1	**17·9**	18·2
St. George's ...	21·5	18·8	19·8	19·3	**22·1**	20·3
St. Stephen's ...	24·7	20·0	23·4	21·2	**23·1**	22·5
St. Mary's ...	24·1	20·9	22·8	21·4	**25·9**	23·0
St. Bartholomew's	28·7	23·1	23·1	23·6	**23·8**	24·5
Market Hall ...	17·7	17·0	16·1	17·1	**16·0**	16·8
St. Thomas' ...	18·0	17·0	20·8	18·3	**17·8**	18·4
St. Martin's ...	18·8	16·0	17·6	16·4	**16·0**	17·0
Edgbas. & Harborne	12·7	11·1	11·7	11·9	**11·0**	11·7
Deritend	22·0	20·6	22·6	21·3	**20·8**	21·5
Bordesley ...	15·2	13·4	13·4	12·9	**12·5**	13·5
Duddeston ...	22·9	20·1	18·7	20·7	**20·8**	20·6
Nechells	22·9	17·9	19·9	20·5	**20·6**	20·4
Balsall Heath ...	14·8	12·8	12·3	13·6	**13·7**	13·4
Saltley	16·8	13·5	13·4	13·0	**13·6**	14·1
Whole City ...	19·3	16·1	16·8	16·1	**15·9**	16·8

The estimated population, number of deaths, and death rate in each of the districts contiguous to Birmingham will be found below:—

Death rates in city and suburbs.

DEATH-RATE IN BIRMINGHAM AND DISTRICT.

	1908. Population.	1908. Deaths.	Death Rate.
Birmingham ...	558,357	8,992	15·9
*King's Norton ...	76,608	832	10·4
†Yardley	57,630	601	10·4
†Castle Bromwich	3,000	29	9·7
†Erdington ...	28,560	254	8·7
*Aston Manor ...	84,256	1,071	12·5
*Handsworth ...	68,051	742	10·7
*Smethwick ...	68,416	930	13·4
*Oldbury	27,203	479	17·6
Total—Birmingham and District	972,081	13,930	14·1

* Registrar-General. † Annual Report of Medical Officer of Health.

Death rates at various ages.

The mortality rate at various ages is shown for each of the past four years in the following table:—

Age Groups.	Death-rate per 1000. 1905.	1906.	1907.	1908.
Under 5 years ...	55·1	59·4	52·6	51·2
5 and under 10 years ...	3·4	3·9	3·8	3·5
10 ,, 15 ,, ...	2·0	1·9	1·8	1·8
15 ,, 20 ,, ...	2·5	2·2	2·4	2·4
20 ,, 25 ,, ...	3·1	2·9	2·8	2·2
25 ,, 35 ,, ...	5·2	4·8	4·9	5·4
35 ,, 45 ,, ...	10·2	10·2	10·4	10·4
45 ,, 55 ,, ...	16·7	16·6	17·9	18·1
55 ,, 65 ,, ...	33·1	33·6	34·4	35·5
Over 65 years ...	89·0	94·6	93·9	98·1

INFANTILE MORTALITY.

Infant mortality.

The statements in the following paragraphs relating to rate of infantile mortality are based on the number of infants under one year of age who die during a year per 1,000 infants born during the same year. The method of statement differs, therefore, from that in the other sections of this report.

The figures for the whole of England and Wales and for Birmingham for the past ten years were as follows:-

INFANT MORTALITY RATE PER 1,000 BIRTHS.

Year ...	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
England and Wales ...	163	154	151	133	132	145	128	132	118	121
Birmingham ...	193	199	188	157	158	195	155	168	147	145

If the records for England and Wales are examined, it will be found that since 1900 there has been a distinct though fluctuating decline. For the 40 years ending 1900 no such decline had been observed. It is therefore probable that some part of the reduction which has recently taken place has been due to the much greater attention which has been given to infantile mortality than in former years.

In the year 1908 the deaths of 2,339 infants were recorded in Birmingham, as compared with 2,300 in 1907, 2,686 in 1906, and 2,451 in 1905.

Infant mortality in each quarter.

In the following table the infant mortality rate is set out for each quarter of the years 1898 to 1908, together with the mean temperature of the earth at four feet below the surface and the amount of rainfall.

YEAR.	INFANT MORTALITY RATE.					Meteorloogical Observations (3rd Quarter).	
	Whole Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Mean Temperature of soil (4ft. deep).	Total Rainfall
1898 ...	190	159	142	276	184	54·3	4·50
1899 ...	193	144	130	337	163	55·9	4·98
1900 ...	199	177	164	267	190	54·4	5·43
1901 ...	188	156	139	268	191	54·8	5·91
1902 ...	157	161	146	143	178	52·8	7·51
1903 ...	158	143	129	171	184	52·0	9·85
1904 ...	195	172	152	274	185	54·1	5·75
1905 ...	155	136	136	200	149	54·1	7·33
1906 ...	168	141	139	259	145	54·0	2·97
1907 ...	147	157	126	124	184	52·2	6·08
Average of ten years	175	155	140	232	175	53·9	6·03
1908 ...	145	134	118	184	145	52·9	6·94
Percentage Reduction in 1908	17·1	13·5	15·7	20·7	17·1		

By such a table as the above it is possible to study the influence of the weather conditions during the third quarter on the rate of infant mortality. When the records are examined for a long series of years, the most striking fact is the marked fluctuations which are noticeable, and when these are compared with the meteorological statistics, it is evident that cool summers, particularly if marked by considerable rainfall, are those in which the infant mortality is low. By separating the statistics for the third quarter from the others, this influence of the weather can, to a considerable extent, be eliminated, and the other factors can be the better studied.

Thus it will be seen that the infant mortality during the first quarter of 1908 was 13·5 per cent. below the average in the ten preceding years; in the second quarter the corresponding reduction amounted to 15·7 per cent.; while in the fourth quarter it amounted to 17·1 per cent.

These reductions in the mortality during the first, second, and fourth quarters are distinctly satisfactory—even more so than the much larger reduction in the third quarter, because the former are not so largely dependent on climatic conditions.

Chief causes of infant deaths.

The deaths from various causes of infants under one year of age during the years 1899 to 1908 are shown below:—

Causes of Death.	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Measles	53	35	62	37	50	47	40	46	81	13
Whooping Cough ...	74	129	81	122	37	210	72	105	63	121
Diarrhœa	670	475	634	327	462	764	364	667	188	364
Enteritis	442	331	154	78	84	92	126	151	116	128
Tuberculous Diseases	91	114	129	98	111	93	75	54	70	58
Premature Birth ...	366	353	348	361	365	377	304	321	318	338
Debility & Marasmus	574	670	648	562	531	569	536	453	458	457
Convulsions ...	194	178	167	172	119	144	128	98	120	104
Bronchitis, Pneumonia, and Pleurisy ...	398	500	399	409	413	505	380	356	441	335
Suffocation... ...	92	92	92	70	95	96	75	85	78	78
All other Causes ...	444	489	436	445	401	405	351	350	367	343
Total ...	3398	3366	3150	2681	2668	3302	2451	2686	2300	2339

The causes of infant mortality may be divided into four groups:—

1.—Those mainly relating to anti-natal conditions:—

Prematurity,
Debility,
Marasmus,
Inanition.

Chief causes of infant deaths—*(continued.)*

2.—Those due to improper feeding:—
Diarrhœa,
Enteritis.
Convulsions.

3.—Those due to inflammation of the respiratory organs:—
Bronchitis,
Pneumonia.

4.—Those due to the infections:—
Exanthemata.

With respect to these groups it is important to know whether there is evidence of increased mortality, and this may be seen from the figures given below.

As regards prematurity, the proportion of deaths per 1,000 births during the years 1881 to 1908 were as follows:—

PREMATURITY (Deaths under 1 year per 1,000 Births).

	1881—1885	1886—1890	1891—1895	1896—1900	1901—1905	1906	1907	1908
Birmingham ...	12·3	16·2	21·7	22·3	21·0	20·0	20·4	20·9
England and Wales ...	14·2	16·1	18·4	19·6	20·2	20·4	19·8	—

It appears from these figures that the proportion of deaths due to prematurity has increased in Birmingham, as they have done in England and Wales. Possibly much of the increase may be due to better registration of such deaths, or the better classification of them.

ATROPHY, DEBILITY, MARASMUS, &c.
(Deaths under 1 year per 1,000 Births).

	1881—1885	1886—1890	1891—1895	1896—1900	1901—1905	1906	1907	1908
Birmingham ...	34·1	33·9	36·0	35·4	34·1	28·3	29·3	28·3
England and Wales ...	22·2	21·7	21·5	20·5	17·9	16·1	15·0	—

In this group the proportion of deaths has shown a diminution during the past three years, while for the twenty preceding years the proportion had remained somewhat stationary in Birmingham. It is interesting to note that somewhat similar results are found in the figures for England and Wales.

Atrophy, debility, &c., as a cause of death is enormously more common in Birmingham than in the country as a whole, the mortality rate in Birmingham being nearly double what it is in England. Here again a small part of the difference may be due to difference in registration, but while this is so, the major part is due

Chief causes of infant deaths—(*continued.*)

to the feeble condition in which the new-born children in Birmingham are brought into the world.

DIARRHŒA, ENTERITIS AND CONVULSIONS

(Deaths under 1 year per 1,000 Births).

	1881—1885	1886—1890	1891—1895	1896—1900	1901—1905	1906	1907	1908
Birmingham ...	33·8	39·3	40·6	66·3	45·6	57·1	27·1	36·9

Here again great variation is shown, due to climatic conditions acting in conjunction with ignorance and carelessness on the part of the parents. This subject is further dealt with under the heading "Diarrhœa."

PNEUMONIA AND BRONCHITIS

(Deaths under 1 year per 1,000 Births)

	1881—1885	1886—1890	1891—1895	1896—1900	1901—1905	1906	1907	1908
Birmingham ...	24·7	27·3	27·7	25·3	25·2	22·1	28·2	20·7

The details of mortality during 1908 are given in the following table:—

INFANTILE MORTALITY DURING THE YEAR 1908.

Deaths from stated Causes in Weeks and Months under One Year of Age.

Cause of Death.	Weeks.				Total under 1 Month.	Months.											Total Deaths under One Year.
	0	1	2	3		1	2	3	4	5	6	7	8	9	10	11	
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	.	.	..	..	..
Chicken-pox	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	..	..	..	1	1	..	1	..	1	..	..	..	2	1	3	4	13
Scarlet Fever	..	..	..	..	..	..	..	..	..	..	1	..	1	2	1	1	6
Diphtheria: Croup	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	2
Whooping Cough	1	..	..	1	2	9	8	8	15	12	13	7	14	10	11	12	121
Diarrhœa, all forms	..	..	9	4	13	41	38	44	35	46	32	29	22	30	17	17	364
Enteritis (*not Tuberculous*)	..	3	1	1	5	11	14	24	14	7	19	9	4	5	6	10	128
Gastritis	1	..	3	1	5	3	6	1	3	4	1	2	..	..	..	..	25
Premature Birth	236	39	27	16	318	15	3	1	1	..	..	..	..	..	..	..	338
Congenital Debility and Defects	146	35	27	25	233	38	9	4	2	2	2	4	5	..	..	1	300
Injury at Birth	8	1	..	..	9	..	..	..	..	..	..	..	..	..	..	..	9
Want of Breast-milk	..	1	2	2	5	7	4	1	4	..	1	2	..	..	..	1	25
Atrophy, Debility, Marasmus	..	..	..	..	..	42	55	38	31	14	20	13	10	12	2	7	244
Tuberculous Meningitis	..	1	..	..	1	2	1	2	7	1	1	4	1	4	..	2	26
Tuberculous Peritonitis Tabes Mesenterica	..	..	1	..	1	1	..	1	2	2	1	2	3	1	1	2	17
Other Tuberculous Diseases	..	..	..	.	..	1	3	..	..	4	..	3	..	1	..	3	15
Erysipelas	..	..	1	1	2	1	..	..	..	.	..	..	..	..	..	..	3
Syphilis	1	1	2	1	5	8	6	3	1	2	..	..	1	..	..	..	26
Rickets	..	..	..	..	..	..	..	..	..	..	1	1	1	.	..	..	3
Meningitis (*not Tuberculous*)	1	..	..	..	1	5	2	2	2	5	2	3	7	3	6	5	43
Convulsions	15	4	11	3	33	20	7	7	10	5	8	4	..	4	2	4	104
Bronchitis	2	..	7	4	13	18	18	17	15	15	12	16	13	8	9	3	157
Laryngitis	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..
Pneumonia	..	2	2	3	7	13	19	9	17	11	18	19	17	18	13	16	177
Suffocation, overlaying	9	3	3	3	18	15	22	8	7	6	1	..	1	..	..	..	78
Other Causes	17	8	6	3	34	9	6	3	5	5	8	9	14	10	8	4	115
	437	98	102	69	706	259	222	173	172	141	142	127	117	109	79	92	2339

Births in the year—legitimate 15,686, illegitimate 455; Deaths from all causes at all ages—8,992; Population estimated to middle of year—558,357.

From the foregoing table it will be seen that as regards ages the mortality was distributed as shown below:—

Ages.	Percentage of Deaths.			
Under 1 week	19%	Total under 4 weeks	30 %	Total under 3 months 50%
1—2 weeks	4%			
2—3 ,, ...	4%			
3—4 ,, ...	3%			
1—2 months	11%			
2—3 ,, ...	9%			
3—6 ,, ...	21%			
6—9 ,, ...	17%			
9—12 ,, ...	12%			

Infant mortality in wards.

If comparison is made between the five Wards in which infant mortality is highest and the five large wards which are mainly occupied by the skilled artisan population, there is found to be a difference of 70 per cent. in favour of the latter. Unfortunately, it is impossible from the Birmingham figures to go further in the direction of indicating how very closely infant mortality is related to poverty, ignorance, and carelessness. It is probably quite safe to say that among the middle classes and better classes in Birmingham the mortality does not exceed 80 deaths per 1,000 births, while, as is indicated in the table below, there are many areas in the City where the rate exceeds 200 per 1,000 births.

INFANT MORTALITY IN WARDS.

WARDS.	Infantile Mortality Rate per 1,000 Births.					Percentage Increase or Decrease in 1908, compared with the 4 years 1904-1907
	1904.	1905.	1906.	1907.	1908.	
Rotton Park ...	178	134	136	135	117	- 20
All Saints'	173	126	166	129	135	- 9
Ladywood	192	160	157	133	118	- 26
St. Paul's	225	138	185	158	201	+ 14
St. George's ...	213	151	161	150	169	—
St. Stephen's ...	232	177	222	199	214	+ 3
St. Mary's	331	201	207	200	208	- 11
St. Bartholomew's	263	207	268	198	201	- 14
Market Hall... ...	187	186	195	199	208	+ 8
St. Thomas' ...	196	164	199	135	153	- 12
St. Martin's ...	185	179	185	160	137	- 23
Edgb'n and Harb'e	133	131	117	100	93	- 22
Deritend	208	205	201	179	159	- 20
Bordesley	146	131	132	119	107	- 19
Duddeston	217	171	158	171	174	- 3
Nechells	219	161	192	166	171	- 7
Balsall Heath ...	150	113	117	98	104	- 13
Saltley	178	140	130	125	105	- 27
City	195	155	168	147	145	- 13

It is somewhat difficult to explain the reasons for some of the differences which are found in the last column of the table, particularly in view of the special work which has been commenced in St. Stephen's, St. George's, and St. Bartholomew's Wards (referred to on pages 22 and 23).

There has been a reduction of 13 per cent. for the whole City when compared with the mean rate in the preceding four years. In England and Wales the reduction was, for the same years, 7·6 per cent. In the individual Wards the amount of infant mortality compared with the four preceding years varied from an increase of 14 per cent. in St. Paul's to a reduction of 27 per cent. in Saltley.

Infant mortality in large towns.

The following figures are of interest, as showing the relative amount of infantile mortality in Birmingham and other towns and districts:—

INFANTILE MORTALITY IN THE 20 LARGEST TOWNS AND IN 7 LARGE DISTRICTS NEAREST TO BIRMINGHAM.

	1908.	Average, 1898-1907.	Percentage above or below Average
London	113	143	- 21
Liverpool	141	174	- 19
Manchester	151	177	- 15
Birmingham	**144**	**175**	**- 18**
Leeds	137	164	- 16
Sheffield	140	175	- 20
Bristol	126	132	- 5
West Ham	128	162	- 21
Bradford	143	155	- 8
Newcastle	136	160	- 15
Hull	145	163	- 11
Nottingham	145	177	- 18
Leicester	131	166	- 21
Salford...	152	180	- 16
Portsmouth	99	147	- 33
Cardiff	125	143	- 13
Bolton	148	160	- 7
Croydon	99	126	- 21
Sunderland	146	161	- 9
Willesden	99	127	- 22
King's Norton	86	112	- 23
Yardley	100	121	- 17
Erdington	91	138	- 34
Aston Manor	127	165	- 23
Handsworth	90	120	- 25
Smethwick	134	148	- 9
Oldbury	146	187	- 22

The causes of infant mortality.

Having now considered the main statistical facts in regard to infant mortality in Birmingham during 1908 as compared with the great mortality in previous years, it is desirable in the next place to look more closely into the reasons why, even when the total death rate is the lowest on record, there should still be so extremely high a death rate among infants.

It has been repeatedly stated in the Birmingham reports that a large part of the mortality is preventible, and that its main causes are the poverty, ignorance, and carelessness of the mothers. The Registrar-General, in his recently-issued Annual Report for 1907 (p. xli.), says: "Much of the loss of infant life is no doubt due either to ignorance or to callous neglect on the part of the mothers." In the report of the Duke of Devonshire's Committee on Physical Deterioration this topic was fully discussed, the opinion being expressed that among the younger women of the present day there is *evidence of increasing carelessness and deficient sense of responsibility, which can only be disastrous to the rising generation.*

Measures for reducing infant mortality.

Largely, the remedies for these high rates must be educational. In the first place, there must be a far higher standard of cleanliness in the homes and surroundings of the poorer classes of the community. The increased attention now being given to teaching such subjects as elementary hygiene to boys and girls in elementary schools must have some effect. It is probable that in time this branch of instruction will be developed. The children from the poor-class districts of our City, if left to the teaching and example of their parents, are likely to show even a greater disregard for cleanliness than their parents, unless some outside instruction be given and public opinion directed against the dirtiness under which so many live at present. In this direction the systematic medical examination of school children may be the means of enabling some pressure to be brought to bear on the parents of children with dirty clothes.

It has often been advocated that the older girls in elementary schools should be taught to wash and dress babies or dolls, but probably this is much less important than the general teaching of cleanliness by properly-arranged lessons and the maintenance of a proper standard of cleanliness among the children at day schools. Any special teaching may then properly be reserved for continuation classes after leaving the elementary school.

The evil of dirtiness is so widespread and so productive of harm that no general summary of the measures that are desirable to prevent infant mortality would be complete without a reference to the necessity of teaching

Measures for Reducing infant mortality—(*continued.*)

the rising generation a much higher standard of cleanliness than their parents follow.

The education of the present mothers is being attempted by various organisations in Birmingham. Indeed, it may be said that within the past eight or ten years measures have been adopted in nearly every town in this country, and in most of the European countries, with a view to instructing mothers how to prevent the waste in infant life.

Of the measures which are likely to have an influence on the Birmingham statistics there are

(1) The general improvement of the house and its surroundings, which is being accomplished, and to which further reference need not be made here.

(2) Visits by district visitors, guardians, relieving officers, aid societies, nurses, &c., all of whom are constantly giving advice in regard to general cleanliness.

(3) The operation of the Midwives Act, 1902, which has enabled the Health Committee to insist that every midwife shall give reasonable advice to her patient as to the feeding and rearing of the infant. With this object in view, the midwives in Birmingham during 1908 gave to about 10,000 mothers shortly after confinement a copy of the booklet approved by the Health Committee on the feeding and rearing of babies. Inquiry is constantly being made as to how this work is being carried out, and it is found that, as a whole, it is done as well as can be expected of these women, some of whom cannot themselves read the booklet.

(4) The instructions given at hospitals, dispensaries, and other institutions, as well as by the medical profession, must always be borne in mind in estimating the part played by various organisations in the struggle against infant mortality.

(5) A very important voluntary society has been established in St. Bartholomew's Ward as an Infants' Health Society, and another is soon to be established in another district. Wherever such societies exist the results appear to be distinctly good. Partly by the aid of voluntary visitors and partly by that of a paid visitor, mothers are encouraged to take a greater interest in the welfare of their infants. The infants are regularly weighed, and when found to be doing badly are seen by a doctor.

Measures for Reducing infant mortality—(*continued.*)

(6) The large staff of trained and experienced Health Visitors form what is perhaps one of the most important sources of instruction to the poorer class mothers. Formerly, the Health Visitor had to rely on the Registrar for information of the occurrence of a birth. Unfortunately, the information derived in this way was often belated, and it was therefore thought desirable to adopt the Notification of Births Act, 1907, so that the information as to the occurrence of a birth might be available within a few days of its taking place. The Health Visitors then visit the houses where it is probable that their visit will be useful. During 1908 approximately 10,000 visits were so made. In addition to the primary visits to houses where births occur, they follow up cases when there is obvious carelessness, and in this way considerable improvement is obtained. A summary of the work done by the Health Visitors will be found on page 119.

(7) The Notification of Births Act also enabled an experiment to be made in districts where infant mortality was highest, to see if it were possible by the most skilled and most frequent visiting to lower the rate of mortality. Unfortunately, the nine months during which the experiment has been in operation is too short a period to show any definite results. To supervise the work in St. Stephen's and St. George's Wards the services of Dr. Jessie Duncan were engaged, and two Health Visitors were specially detailed to assist. Dr. Duncan makes the first visit to each house where a birth has been notified. This is followed by weekly visits by the Health Visitor in the cases where such visits are likely to be useful. After the baby is a month old the visits are repeated monthly till the child is three months old, and then quarterly until it is twelve months old. During the whole of this period Dr. Duncan also visits whenever the Health Visitors think it necessary. This work has been carried on without friction, and with the kindliest expressions of thankfulness on the part of the mothers.

Special measures in St. Stephen's and St. George's Wards.

Dr. Duncan's report on her work in St. Stephen's and St. George's Wards during 1908 is as follows:—

"To the Medical Officer of Health.

"Sir,

"*St. Stephen's and St. George's Wards.*

"During 1908 there were 1,538 children born in these Wards. Of this number 350 were born before I commenced my duties.

Special measures—(*continued*).

"Of the 1,538 children born 173 died. The ages of these at death were as follows:—

Under 1 week	35	112	= 64%
1 week to 1 month ...	21		
1—2 months	30		
2—3 ,, ...	26		
3—6 ,, ...	36		= 21%
6—9 ,, ...	22		= 13%
9—12 ,, ...	3		= 2%

"The causes of death were:—

Prematurity and congenital defects	51
Epidemic enteritis	49
Marasmus	24
Bronchitis and broncho-pneumonia	12
Overlaying	11
Convulsions	10
Whooping cough...	4
Meningitis	4
Other causes	8

"Of the 173 children who died 49 were found to have died before the first visit was paid; in 35 of these cases the baby was the first child.

"In certain cases no information could be obtained at the house as the family had left before the first visit was paid.

"As regards the general health of the mothers whose children died, I should classify them as follows:—

Good health	72
Indifferent health	82
Bad health	11
No information	8

"Employment of mothers of the children who died:—

Mothers at work before confinement,	88	; not at work	78
,, ,, after ,,	32	; ,,	134

"Of the 1,538 births it was ascertained that the mothers in 735 instances were employed away from home, while 803 were not so employed. The nature of the work was as follows:—

Special measures (*continued*).

Light Presswork	142
Heavy Presswork	48
Charing and Washing	95
Small Shops	34
Brass Polishing	33
Machine Work	30
Hook and Eye Carding	26
Silver and Gold Polishing	24
Warehouse Work	24
Lathe Work	21
Machinist (Sewing)	16
Capstan Lathe	16
French Polishing	15
Lead Soldering (hard)	14
Lead Soldering (soft)	6
Hawking	13
Bicycle Polishing	12
Paper Box Making	12
Foot Stamping	12
Power Press	11
Scratch Brushing	11
Pen Grinding	11
Hand Burnishing	9
Laundry	9
Brass Lacquering	8
Electro-Plate Polishing	6
Japanning	5
Core making for Brass Casting	5
Miscellaneous	67

"Of the 735 women, most of whom were industrially employed, the wages of their husbands was said to be as follows:—

HUSBANDS' WAGES.

Out of Work	144
Under 10/-	30
From 10/- to 15/-	70
,, 15/- to 20/-	152
,, 20/- to 25/-	286
,, 25/- to 30/-	28
Total	710

Illegitimate births 25.

Special measures—(*continued*).

"During my visits I have been much pleased to note the interest taken by the young mothers. They are most grateful for suggestions with regard to the feeding of their babies. There is good ground for hope that in the near future these young mothers, who see the advantage of proper feeding, will not only be educated themselves, but will pass on their knowledge. They frequently express their gratitude for advice, and are always ready to admit their previous ignorance.

"The practice of supplying printed instructions regarding the care and feeding of children is very valuable. In a great many cases, however, where the mother is careless and neglectful, actual demonstration as to the preparation of the food has to be given, and sometimes repeated.

"With regard to breast feeding, many mothers whose children were not thriving were found to be giving the meals very irregularly. When this fault was corrected the infant improved.

"The practice of using 'comforters' for babies is very prevalent in these districts. In almost every case, even amongst otherwise careful mothers, these articles are in constant use. They are usually in a dirty condition, contaminated with dirt from the floor, the table, and the clothing. They are a common cause of digestive troubles in children, both from the amount of dirt they introduce and from the air which is carried into the stomach. They are a common cause of 'thrush,' and tend to make the child cross and irritable. They are always warm and moist, and afford a suitable soil for the growth of bacteria of all kinds. Out of 49 fatal cases of epidemic diarrhœa there were only three cases in which no comforter was used. One mother told me that she spent 6d. per week on the purchase of these!

"Another difficulty which has to be contended with is the devotion of the mothers to the long tube bottle. Great persuasion is often required to induce them to abandon this for the more hygienic boat form. Many of the mothers are disinclined to take the trouble of superintending the feeding of the child from the boat bottle.

"At the beginning of 1909 I began the routine weighing of the children at a room rented in the district. So far the results have been most satisfactory and encouraging. It is gratifying to note the interest taken by the mothers in the fortnightly weighing of the children, and, through this, their greater care in the feeding of them.

Special measures—(continued.)

"Many mothers who were of the opinion that their children were insufficiently nourished by breast feeding alone have been induced by the record which the weighing machine has shown them to refrain from supplementing breast feeding by artificial. It is also an incentive to the mothers to take greater care with regard to the cleanliness of the child's body and clothing. Another point worthy of note is the fact that at the room the mothers are in a more receptive condition to take instructions intelligently than when part of their attention is taken up with household duties.

"For some months, by means of a small fund given for the purpose, the experiment was tried of feeding those mothers whose milk was found to be of poor quality through insufficient nourishment. The results were most satisfactory, the milk of the mothers in all cases improving markedly in quality, with a corresponding improvement in the condition of the infant.

"One mother who had the benefit of these meals informed me that out of a family of ten children this was the only case in which she had been able to nurse the child. It is to be regretted that this plan has had to be abandoned through lack of funds. Such a system on a larger scale would be of the greatest benefit in improving the health of the mothers, and so decreasing the mortality amongst the children.

"I am,

"Yours faithfully,

"JESSIE G. DUNCAN."

INFECTIOUS DISEASE.

Zymotic mortality.

One thousand and seventy-seven deaths were due to one or other of the seven principal zymotic diseases, as compared with 992 in the preceding year, 1,521 in 1906, and 1,051 in 1905. This number is equal to a death rate of 1·90, against 1·80 in 1907, 2·78 in 1906, and 1·94 in 1905. The rate of mortality, therefore, from these diseases was a relatively low one, although not so low as in 1907, and as most of the diseases are more or less preventible, this is satisfactory. The following figures show the number of deaths from each of the seven diseases, together with the average in the preceding ten years and the number above or below the average:—

Disease.	1908.	Average, 1898 to 1907.	Above or below Average.
Smallpox	0	2	- 2
Measles	63	219	- 156
Scarlet Fever	77	103	- 26
Diphtheria	105	111	- 6
Whooping Cough	313	237	+ 76
Typhoid Fever	49	85	- 36
Diarrhœa	470	642	- 172
Whole Group	1,077	1,399	- 322

Zymotic death rates in large towns.

Of the 76 great towns, 23 had a higher zymotic death rate than Birmingham, the highest rates being 2·70 in Stockton, 2·80 in Burnley, 2·88 in Rotherham, 3·04 in Salford, 3·47 in Middlesbrough, and 3·49 in Rhondda; while the lowest rates were 0·40 in Hastings, 0·57 in Hornsey, 0·64 in Brighton, 0·71 in Bournemouth and Northampton, and 0·72 in West Hartlepool.

SMALLPOX.

Smallpox.

No case of smallpox occurred during the year, and in only one instance was a suspicious case notified. Probably at no time for at least a century has this country been so free from this disease as it has been during the past two or three years.

VACCINATION.

Vaccination.

I have received returns from the Vaccination Officers showing the number of children born in the city during the year ended June 30th, 1908, and the number who had been successfully vaccinated, or otherwise accounted for, at the time the returns were made up. The following figures are abstracted from these returns:—

Births returned	15,977	
Conscientious objections... ...	304 or	1·9% of total.
Died unvaccinated	1,680	
Successfully vaccinated	12,170 or	85·1% of survivors.
Postponed by medical certificate	190 or	1·3% ,,
Removed to other vaccination districts	192 or	1·3% ,,
Lost sight of	1,167 or	8·2% ,,
Still under notice...	226 or	1·6% ,,

MEASLES.

Measles.

The mortality rate from measles during 1908 was one of the lowest on record. The figures for recent years are given on the next page:—

	Deaths from Measles.	Death Rate per 1,000.
1894	316 ...	·64
1895	133 ...	·27
*1896	310 ...	·61
1897	414 ...	·82
1898	182 ...	·36
1899	196 ...	·38
1900	130 ...	·25
1901	300 ...	·57
*1902	189 ...	·35
1903	195 ...	·37
1904	207 ...	·39
1905	239 ...	·44
1906	227 ...	·42
1907	323 ...	·59
*1908	63 ...	·11

*53 weeks.

Before the end of the year there commenced one of the most severe outbreaks ever experienced in Birmingham. This will be dealt with in the Annual Report for 1909, but a short report upon it was issued in March last, a copy of which will be found at the end of the present report. In the first quarter of 1908 seven deaths were registered, in the second quarter six, in the third quarter three, and in the fourth quarter 47, most of which occurred towards the end of the quarter. The experience in Birmingham is that which is frequently observed in other towns, viz., that when a period of unusual quiescence in regard to measles occurs, it is commonly followed by an outburst of great severity. It will be noticed that for a considerable number of years prior to 1908 Birmingham, unlike many other towns, had a fairly continuous prevalence of measles, the deaths numbering from 200 to 300 per annum.

The ages at which the children died during the past six years are as follows:—

	1903	1904	1905	1906	1907	1908
Under 1 year ...	50	47	40	46	81	13
1 and under 2 yrs.	74	75	96	91	109	19
2 ,, 3 ,,	26	37	47	43	60	11
3 ,, 4 ,,	21	18	29	17	32	8
4 ,, 5 ,,	12	11	13	15	23	3
All under 5 ...	183	188	225	212	305	54
5 and under 10	12	17	13	15	17	7
All over 10 ...	0	2	1	0	1	2

SCARLET FEVER.

There were 2,275 new cases of scarlet fever reported during 1908, as compared with 2,522 in 1907. Scarlet fever.

The number of deaths was 77—equal to a fatality rate of 3·4 per cent., as compared with 3·8 in 1907.

The two following charts show the incidence rate from scarlet fever per 1,000 of the population for each year since 1890, the fatality rate per cent. during the same period, and the number of attacks recorded during each fortnightly period since 1903.

Scarlet fever in wards.

The incidence rate per 1,000 of the population living in each Ward of the City for the years 1904 to 1908 inclusive (together with the mean) was as follows:—

SCARLET FEVER SICKNESS RATES.

Ward.	1904.	1905.	1906.	1907.	1908.	Mean of five years.
Rotton Park	4·32	3·38	3·22	3·96	5·14	4·00
All Saints'	3·44	3·84	3·41	3·69	4·67	3·81
Ladywood	4·39	2·98	2·75	2·82	2·38	3·06
St. Paul's	2·43	2·00	1·72	3·73	3·61	2·70
St. George's	4·07	4·57	5·04	4·48	5·86	4·80
St. Stephen's	3·60	4·00	5·20	6·06	4·77	4·73
St. Mary's	1·26	3·28	2·59	4·33	1·85	2·66
St. Bartholomew's ...	2·29	3·07	2·19	5·34	2·46	3·07
Market Hall	2·07	1·88	2·12	4·59	1·82	2·50
St. Thomas'	2·77	2·15	1·33	4·38	2·64	2·65
St. Martin's	2·78	1·78	2·09	6·72	3·20	3·31
Edgbaston and Harborne	2·52	2·26	2·23	4·88	2·28	2·83
Deritend	2·78	2·07	1·72	3·41	3·96	2·79
Bordesley	2·57	3·03	3·27	4·06	4·18	3·42
Duddeston	2·17	4·19	3·75	6·08	3·79	4·00
Nechells	2·07	3·35	4·21	6·13	4·86	4·12
Balsall Heath	4·16	2·35	3·56	4·25	7·63	4·39
Saltley	3·06	4·04	4·86	4·75	3·91	4·12

Scarlet fever cases removed to hospital.

The percentage of cases isolated in the City Hospital was 91. This is a larger percentage than in any previous year, and is somewhat remarkable testimony to the regard in which the Hospital is held by the citizens. It is also particularly remarkable, as it occurred during a year when the following letter was sent to each medical practitioner in the City:—

"City of Birmingham
"Health Department,
"The Council House,
"June, 1908.

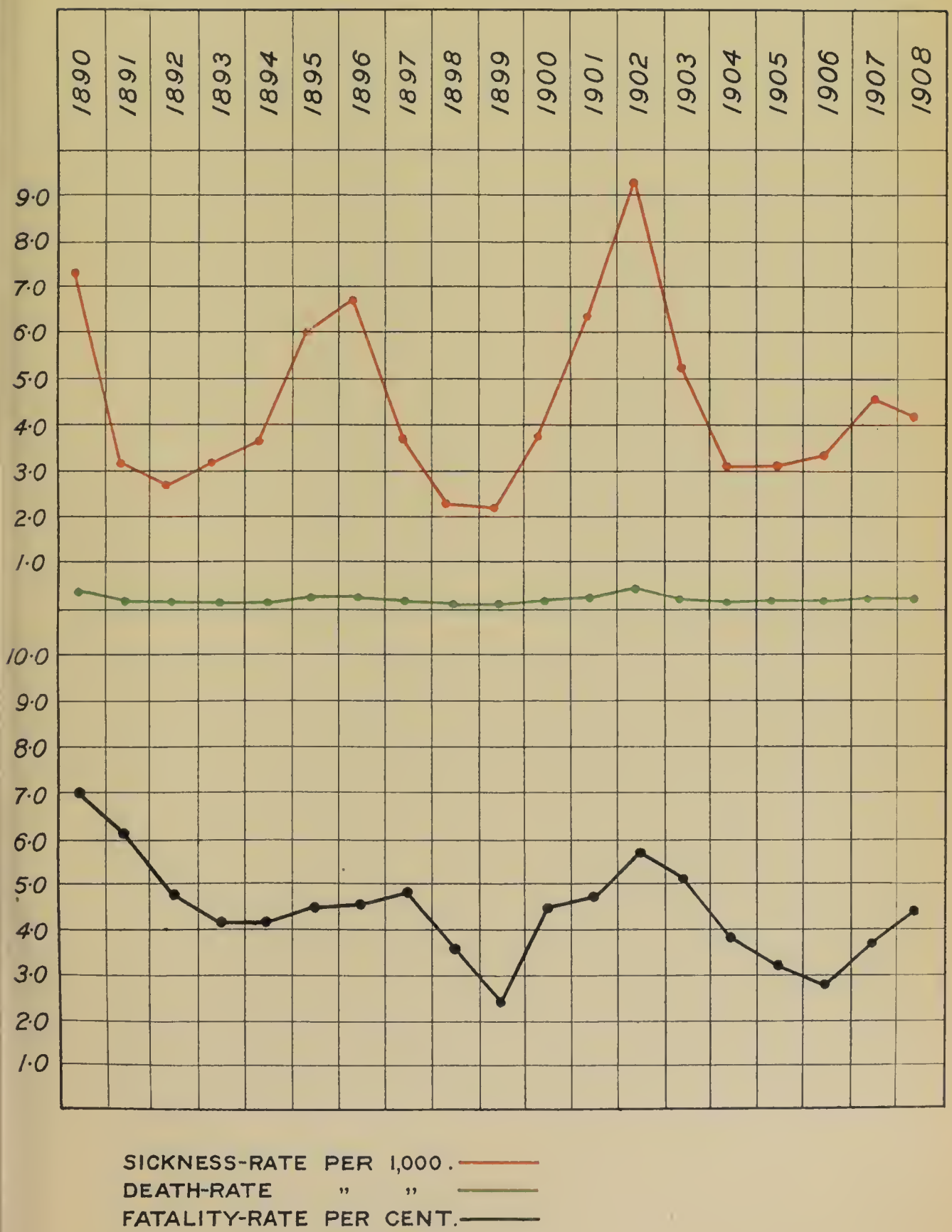
"Dear Sir,

"Hospital Accommodation for Scarlet Fever Patients.

"During recent years it has been the custom on the part of the general public to think that in every instance a patient suffering from scarlet fever must be removed to the City Hospital. Investigation has shown that such

CHART No. 2

SCARLET FEVER.

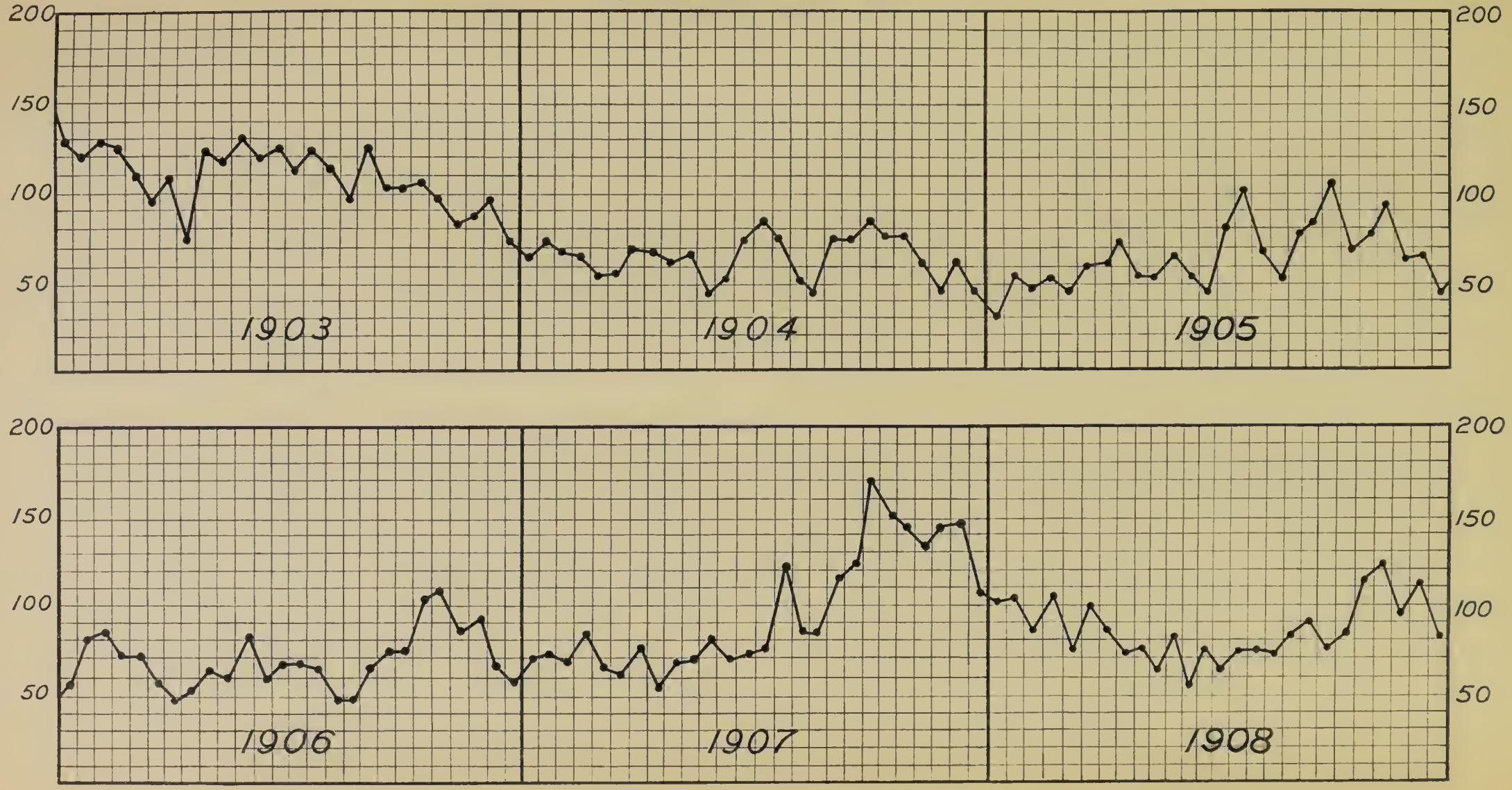


SICKNESS-RATE PER 1,000.

DEATH-RATE " "

FATALITY-RATE PER CENT.

CHART No. 3.



CASES OF SCARLET FEVER IN FORTNIGHTLY PERIODS.

removal to hospital is in some cases quite unnecessary, and often very distasteful to parents of children. The Health Committee, therefore, while not desiring to limit the admissions in a way which might be detrimental to the public health, ask me to draw the attention of the medical profession to the question, so that where reasonable provision can be made at home isolation in hospital need not be resorted to.

"I would suggest, therefore, that in cases where a separate room and an attendant are available, and particularly where few children from the house attend the public elementary schools, and where there is no business necessitating the handling of food products, it is not necessary to send the patient to the Fever Hospital.

"Yours faithfully,

"JOHN ROBERTSON"

The total number of cases notified and the number removed to the City Hospital, together with the percentage, will be seen from the table below:—

	Cases Notified.	Cases Removed.	Percentage.
1893	1614	1339	83%
1894	1788	1539	86%
1895	2964	2595	88%
1896	*3389	*2812	83%
1897	1929	1641	85%
1898	1320	1083	82%
1899	1255	1052	84%
1900	2063	1814	88%
1901	3314	2959	89%
1902	*5044	*4534	90%
1903	2835	2455	87%
1904	1659	1437	87%
1905	1684	1489	88%
1906	1814	1557	86%
1907	2522	2243	89%
1908	*2275	*2062	91%

*53 weeks.

How scarlet fever spreads.

The most striking feature about the cases of scarlet fever in a large city like Birmingham is the absence of evidence as to where the infection comes from in the vast majority of cases.

The most careful enquiry fails to elicit a source for the infection.

Schools do not, and never have in Birmingham, played more than a very minor part in the spread of the

disease. Most careful records were again kept of the relationship between scarlet fever and school attendance, and except in one or two isolated instances the year 1908 was in this respect similar to its predecessors. In the case of Steward Street School, where there are over 1,000 children in attendance, 36 cases occurred during October and November, most of which were probably school-infected cases. In one or two other instances a few cases were traced to infective children at school.

Similarly, public institutions do not play any important part in the spread of the disease. Sixty-one cases were notified from public institutions, but in no case did any extensive outbreak occur. Most of the 61 reports represent isolated cases in the numerous public institutions in the City.

Again, no outbreak occurred which could be in any way ascribed to the milk supply. It is possible that isolated cases may have had milk as their source of infection, but such cases could not be distinguished from others.

Our knowledge as to how scarlet fever is spread in large cities is distinctly unsatisfactory. Equally unsatisfactory as a consequence is our scheme for preventing its spread. For a number of years, therefore, particularly careful records of each case have been kept, with a view to accumulating a mass of material from which some useful preventive measures may be deduced. Certain general observations were made on this subject in the Annual Report for 1907, pp. 26 *et seq.* It is therefore unnecessary to deal at length with it in the present report.

1. Secondary Cases in Infected Houses.

Secondary cases of scarlet fever.

The lines of enquiry into the origin of scarlet fever cases during 1908 were precisely similar to those adopted in 1907.

As a preliminary step in such an enquiry, it is necessary to eliminate all cases occurring in public institutions, and to revise the diagnosis in every case in which evidence has subsequently come to light that the case was not one of scarlet fever.

The following table gives figures for five years as to the incidence of scarlet fever in houses from which the first case was removed, and also as regards houses in which the first patient was nursed at home.

RECURRENCE OF SCARLET FEVER IN HOUSES (1904-1908).

		1904.	1905.	1906.	1907.	1908.	Five years 1904-8.
Total cases.	Number of cases	1473	1532	1680	2388	2147	9220
	Number of houses involved	1235	1221	1382	1947	1794	7579
	Average number of cases per house	1·19	1·25	1·2	1·2	1·2	1·2
	Number of cases removed to hospital	1253	1334	1431	2077	1861	7956
	Proportion of cases removed to hospital	85%	87·1%	85·2%	87·0%	86·7%	86·3%
	Number of houses from which cases were removed ...	1044	1058	1175	1694	1537	6508
	Proportion of houses from which cases were removed	84·5%	86·6%	85·0%	87·0%	85·7%	86·0%
	Number of houses in which primary cases only occurred	1042	1018	1165	1665	1478	6368
	Proportion of houses in which primary cases only occurred	84·4%	83·4%	84·3%	85·5%	82·4%	84·0%
Hospital cases.	Number of houses from which primary cases went to hospital...	1026	1054	1155	1685	1537	6457
	Number of such houses in which no cases followed...	868	864	979	1456	1249	5416
	Proportion of such houses in which no cases followed ...	84·6%	81·9%	84·7%	86·4%	81·2%	83·9%
Home cases.	Number of houses in which primary cases were kept at home	190	167	211	237	257	1062
	Number of such houses in which no cases followed ...	174	154	186	209	229	952
	Proportion of such houses in which no cases followed ...	91·5%	92·2%	88·15%	88·2%	89·1%	89·6%

It will be noted that the different percentages vary very little from year to year, so that it is fairly safe to draw deductions from the totals set out in the last column of the table.

The most important conclusion which can be drawn from these figures is that in 83·9 per cent. of the houses from which the first case was removed to hospital no secondary case followed, while in the case of those patients nursed at home no secondary case followed in 89·6 per cent. of the houses.

Secondary cases of scarlet fever—(*continued*).

It must be remembered that the latter group contains many of the larger houses as well as many of the smaller families, and in this respect they are at a great advantage over the former. On the other hand, the entire removal of the infection at an early period should be a counterbalancing advantage to the first group of houses.

So far as the foregoing figures are concerned, the final advantage lies distinctly with the group of home-treated cases.

The size of the houses involved in the enquiry and the number of inmates will be seen from the following table:—

	Houses from which 1st Case went to Hospital.	Houses in which 1st Case was kept at Home.
1904.		
Average number of persons per house ...	4·7	5·0
Proportion of children to total inmates ...	41·2%	39·4%
Average number of rooms per house ...	4·6	6·3
Average number of persons per room ...	1·0	0·8
Average number of persons per bedroom ...	1·8	1·4
1905.		
Average number of persons per house ...	5·8	5·0
Proportion of children to total inmates ...	50·2%	40·9%
Average number of rooms per house ...	4·5	6·2
Average number of persons per room ...	1·3	0·8
Average number of persons per bedroom ...	2·3	1·4
1906.		
Average number of persons per house ...	4·7	4·0
Proportion of children to total inmates ...	41·02%	28·8%
Average number of rooms per house ...	4·7	6·2
Average number of persons per room ...	1·01	0·6
Average number of persons per bedroom ...	1·77	1·2
1907.		
Average number of persons per house ...	6·0	3·9
Proportion of children to total inmates ...	49·2%	38·6%
Average number of rooms per house ...	4·7	6·1
Average number of persons per room ...	1·2	0·6
Average number of persons per bedroom ...	1·8	1·4
1908.		
Average number of persons per house ...	5·8	5·0
Proportion of children to total inmates ...	51·6%	40·0%
Average number of rooms per house ...	4·6	6·0
Average number of persons per room ...	1·3	0·8
Average number of persons per bedroom ...	2·2	1·5
Five Years, 1904-1908.		
Average number of persons per house ...	5·4	4·6
Proportion of children to total inmates ...	46·6%	37·5%
Average number of rooms per house ...	4·6	6·2
Average number of persons per room ...	1·2	0.7
Average number of persons per bedroom ...	2·0	1.4

The details as to the susceptible inmates in these houses for each year, and for the group of years, are set out below: —

Secondary cases of scarlet fever— *(continued).*

HOUSES.

1904-08.	1st Case removed to Hospital.					1st Case kept at Home.				
	1904	1905	1906	1907	1908	1904	1905	1906	1907	1908
Proportion of inmates constituted by susceptible children	37·3 %	31·0 %	57·1 %	34·1 %	30·9 %	16·8 %	20·4 %	24·4 %	25·0 %	17·8 %
Average number of susceptible children remaining after each instance	1·76	1·50	1·76	2·05	2·2	0·84	1·01	0·90	0·96	1·7
Average number of susceptible persons (all ages) remaining after each instance	3·96	4·22	4·18	4·2	4·1	2·97	3·18	3·2	3·6	3·3
Proportion of instances in which susceptible children remained ..	80·8 %	82·1 %	81·1 %	82·8 %	80·0 %	52·1 %	51·5 %	55·9 %	57·4 %	50·6 %
Proportion of instances in which susceptible persons (all ages) remained	99·2 %	99·5 %	98·8 %	98·9 %	98·9 %	94·2 %	97·0 %	92·9 %	96·1 %	97·2 %

1904-08.	1st Case removed to Hospital.	1st Case kept at Home.
Proportion of inmates constituted by susceptible children	34·1 %	20·5 %
Average number of susceptible children remaining after each instance ..	1·91	1·07
Average number of susceptible persons (all ages) remaining after each instance	4·13	3·25
Proportion of instances in which susceptible children remained ..	81·4 %	53·6 %
Proportion of instances in which susceptible persons (all ages) remained ..	99·1 %	95·5 %

Mortality from scarlet fever in hospital and at home.

After making corrections on account of revisions of diagnosis and of cases originating in some public institution, it appears that the number of cases removed from their homes to hospital during 1908 was 1,861, of whom 69 died, while of the 286 patients nursed at home eight died, giving the following fatality rates: —

Hospital Isolated Cases	3·7%
Home Isolated Cases	2·8%

II.—So-Called "Return" Cases of Scarlet Fever.

Return cases of scarlet fever.

During the past five years a special enquiry has been made into the occurrence of "return" cases after the discharge of the first patient from isolation.

During 1908 124 such investigations were made in regard to 121 patients who apparently might have received their infection from patients discharged from the hospital, and in regard to three patients who might have received their infection from patients who were isolated at home. The number of such cases (uncorrected) was considerably larger than during the preceding four years, as is shown below:—

	1904.	1905.	1906.	1907.	1908.
So-called "Return" Cases	67	54	62	52	124
,, "Infecting" ,,	66	53	56	35	94

Of the 121 hospital cases, 114 had been in contact with patients discharged from Little Bromwich Hospital, five with patients from Lodge Road Hospital, and two with patients treated in fever hospitals outside the City of Birmingham.

Of the 124 possible "return" cases investigated, at least 19 may be excluded from this category, for the following reasons:—

Secondary case occurred more than 28 days after the discharge of the primary case	3
Infecting case said not to have been Scarlet Fever	9
Return Case not Scarlet Fever after observation in hospital ...	4
Neither infecting nor return case Scarlet Fever	2
Infected probably from another source (Hospital employé) ...	1

The corrected number of "return" cases was therefore 105, and these had relationship with 75 infecting cases, of which 72 came from Little Bromwich Hospital, three came from Lodge Road Hospital, two came from fever hospitals outside the City, and two were patients nursed at home.

The "return" cases" occurred at various intervals of time after first coming in contact with the previous case, the intervals being as follows:—

Return cases of scarlet fever—(*continued*).

After	1	day's	interval	in	1 case.
,,	2	,,	,,		3 cases.
,,	3	,,	,,		5 ,,
,,	4	,,	,,		9 ,,
,,	5	,,	,,		11 ,,
,,	6	,,	,,		7 ,,
,,	7	,,	,,		6 ,,
,,	8	,,	,,		7 ,,
,,	9	,,	,,		5 ,,
,,	10	,,	,,		6 ,,
,,	11	,,	,,		5 ,,
,,	12	,,	,,		7 ,,
,,	13	,,	,,		4 ,,
,,	14	,,	,,		2 ,,
,,	15	,,	,,		3 ,,
,,	16	,,	,,		1 case.
,,	17	,,	,,		3 cases.
,,	18	,,	,,		2 ,,
,,	19	,,	,,		2 ,,
,,	20	,,	,,		2 ,,
,,	22	,,	,,		4 ,,
,,	23	,,	,,		1 case.
,,	24	,,	,,		6 cases,
,,	25	,,	,,		1 case.
,,	27	,,	,,		2 cases.

Careful enquiry was made into the history of each infecting case, with a view to eliciting whether any particular cause could be discovered, and in each case the medical superintendent or medical practitioner was communicated with.

With regard to the patients treated in hospital, the following information as to complications from which they suffered was obtained in this way:—

Complications.	While in Hospital.	After Discharge.
Congestion of Fauces	—	25
Enlargement of Tonsils	12	24
Enlargement of Cervical Glands	19	32
Nasal Discharge	26	44
Otorrhœa	14	6
Albuminuria	14	—
Skin Lesions	3	—
Sores on Face, Head or Hands	25	8
Intercurrent Infectious Diseases	7	—
Rheumatism	4	—
Adenoids	1	3
Wounds	3	—
Other Complications	7	2

Return cases of scarlet fever—(*continued*).

Premature discharge from isolation can scarcely be urged as a cause of these return cases, for the infecting cases were isolated for the following periods:—

23	cases	were	isolated	for	between	40 and 50 days
25	,,	,,	,,		50 ,,	60 days
12	,,	,,	,,		60 ,,	70 ,,
3	,,	,,	,,		70 ,,	80 ,,
6	,,	,,	,,		80 ,,	90 ,,
3	,,	,,	,,		90 ,,	100 ,,
7	,,	,,	,,		Over	100 days.

The patient or his parents receive from the City hospitals the following printed instructions when leaving:—

"Instructions to Parents

"*As to the Care of the Children after leaving Hospital.*

"The child should not be allowed to mix freely with others immediately after leaving hospital, and, if possible, should be sent away for a time to a house where there are no children.

"If this cannot be done, the child should not be permitted to sleep with or kiss other children.

"Should a discharge from the nose or ears occur after the patient has returned from hospital, the child should be isolated, and advice obtained from the family doctor or from the Medical Superintendent at the hospital.

"Great care should be taken to avoid cold after convalescence. Warm clothing should be provided, and flannel worn next to the skin."

In many instances it is difficult or impossible to carry these out in the small back-to-back courtyard houses, but in the majority of cases an attempt is made to do so.

Among the so-called "return" cases, seven were found to have been sleeping in the same bed as the supposed infecting case, while in eighteen other instances the patients were sleeping in a separate bed but in the same room. In 80 other cases there was contact by day only. Eleven of the so-called infecting cases had been away from home for an average of twelve days before coming in contact with the other susceptible children.

III.—Mistaken Diagnosis.

Mistaken diagnosis in scarlet fever.

The number of patients sent to the City Hospital as cases of scarlet fever who, on continued observation proved not to be so suffering, was 145. This is a larger

Mistaken diagnosis in scarlet fever—(*continued*).

number than in the two preceding years, and represents 7 per cent. of the total cases of the disease admitted, against 2 per cent. in 1907, 3 per cent. in 1906, 5 per cent. in 1905, and 9 per cent. in 1904.

The increase during 1908 was largely due to the prevalence of German measles, many cases of which were mistaken for scarlet fever.

In previous reports the extreme danger of wrongly sending such patients to hospital has been pointed out. The majority of such cases are kept isolated at the hospitals at great expense, and many of them develop scarlet fever infection of a severe type.

The following is a list of such cases:—

Corrected Diagnosis.	No. of Cases.	No. which developed Scarlet Fever in Hospital.	Died.
Diphtheria	5	—	1
Scarlet Fever and Diphtheria ...	5	—	2
Measles	8	4	2
German Measles	61	21	2
Whooping Cough	2	—	—
Pneumonia	2	—	2
Other Diseases	20	7	4
TOTAL	103	32	13
No definite disease	42	13	2
TOTAL	145	45	15

Of the 45 patients who caught scarlet fever at the hospital, eight deaths resulted—equal to nearly 18 per cent.

The average stay in hospital of those patients who were wrongly diagnosed, but who did not develop scarlet fever, was 44 days, while among those who did develop scarlet fever the period was 67 days.

DIPHTHERIA.

Diphtheria.

The number of cases of diphtheria notified under the Infectious Disease (Notification) Act during 1908 was, after being corrected for revision of diagnosis, 794, against 1,012 in the previous year, and 817 in 1906.

Diphtheria (*continued*).

There were 105 deaths, equal to a case mortality of 13 per cent. The comparative figures for each year since 1892 will be found in the following table :—

DIPHTHERIA.

	Cases notified.	Deaths registered.	Case-mortality. per cent.
1892 ...	533 ...	102 ...	19
1893 ...	387 ...	83 ...	21
1894 ...	406 ...	91 ...	22
1895 ...	741 ...	214 ...	29
1896 ...	*1,194 ...	*293 ...	25
1897 ...	713 ...	160 ...	22
1898 ...	689 ...	132 ...	19
1899 ...	720 ...	147 ...	20
1900 ...	542 ...	77 ...	14
1901 ...	533 ...	85 ...	16
1902 ...	*787 ...	*130 ...	17
1903 ...	884 ...	135 ...	15
1904 ...	630 ...	115 ...	18
1905 ...	698 ...	98 ...	14
1906 ...	817 ...	93 ...	11
1907 ...	1012 ...	100 ...	10
1908 ...	*794 ...	*105 ...	13

*53 weeks.

From the above figures it will be observed that the disease was rather more fatal than in the previous year, the case mortality being 13 per cent. in 1908, as compared with 10 per cent. in 1907, when the lowest case mortality on record was reached. The figures are comparable with one another year by year, and the general conclusion to be drawn is that the disease while still showing a considerable prevalence is not as fatal now as it was ten or fifteen years ago at the time before antitoxin was introduced into the treatment.

In view of the above figures it cannot be said that the disease itself is less prevalent ; indeed, there is a probability that it is now as prevalent as it was many years ago. The only figures available for a comparison for a number of years are those relating to the death rate per 1,000 of the population. These, of course, do not in any way indicate the prevalence of the disease, but only the number of people who die, and therefore do not enable us to distinguish those years in which there were a few cases of a virulent type from those years in which there were many cases of a mild and less fatal character.

In the following table are set out the comparative figures for mortality per 1,000 of the population for each year since 1873, together with the five-yearly averages :—

DIPHTHERIA DEATH-RATES.

1873	·31		1893	·17	
1874	·21		1894	·18	
1875	·16	Average	1895	·43	Average
1876	·16	·20	1896	·58	·34
1877	·14		1897	·32	
1878	·22		1898	·26	
1879	·18		1899	·29	
1880	·13	Average	1900	·15	Average
1881	·14	·16	1901	·16	·22
1882	·12		1902	·24	
1883	·11		1903	·25	
1884	·10		1904	·21	
1885	·11	Average	1905	·18	Average
1886	·18	·13	1906	·17	·20
1887	·13		1907	·18	
1888	·09		1908	·18	
1889	·12				
1890	·14	Average			
1891	·09	·13			
1892	·21				

Diphtheria in wards.

In the next table will be found the sickness rate from diphtheria during each of the past five years, together with the mean rate, in each of the wards of the City and in the City as a whole :—

SICKNESS RATES FROM DIPHTHERIA.

	1904.	1905.	1906.	1907.	1908.	Mean of Five Years.
Rotton Park ...	1·41	2·29	1·36	1·77	1·48	1·66
All Saints' ...	1·14	0·43	1·69	2·34	1·70	1·46
Ladywood ...	2·06	1·69	2·43	2·14	1·61	1·99
St. Paul's ...	1·09	1·22	1·79	1·59	1·63	1·46
St. George's ...	0·49	1·67	1·17	3·19	1·59	1·62
St. Stephen's ...	0·42	1·50	2·47	2·54	1·74	1·73
St. Mary's ...	0·63	1·16	1·44	2·24	1·43	1·38
St. Bartholomew's	2·02	1·33	1·09	2·04	1·10	1·52
Market Hall ...	0·55	2·43	1·38	1·23	1·93	1·50
St. Thomas' ...	1·12	0·59	1·05	2·02	1·20	1·20
St. Martin's ...	1·06	0·97	1·09	2·45	2·05	1·52
Edgbaston and Harborne ...	1·18	0·87	0·61	1·26	1·43	1·07
Deritend ...	1·20	1·01	1·14	1·34	1·19	1·18
Bordesley ...	1·26	1·06	1·84	1·41	1·19	1·35
Duddeston ...	1·24	2·52	2·22	2·73	1·53	2·05
Nechells ...	0·81	1·74	1·31	1·61	1·34	1·36
Balsall Heath	1·17	0·97	1·56	1·54	1·42	1·33
Saltley ...	1·35	0·85	1·44	1·25	1·34	1·25
City	1·17	1·29	1·50	1·84	1·40	1·44

From the above it will be seen that last year the rate in St. Martin's Ward was the highest. In the previous year it was also high, indicating that the same unrecognised source of infection existed in the district.

Diphtheria and schools.

No outbreak of diphtheria occurred during the year under review in connection with any of our large public

institutions, and in none of our public elementary schools was there any marked prevalence of the disease. In the following table are set out the number of cases during each month of the year, and the number of schools involved in these cases. It will be seen that in the vast majority of cases not much more than one patient suffered from the disease at each school in any particular month, so that the distribution of the cases over the schools was a wide one. Notwithstanding this wide distribution, however, no large outbreak was recorded during the whole of the year at any one school. It is somewhat important to bear in mind the widespread nature of the infection of diphtheria as indicating the liability of any school being involved at any time if suitable conditions present themselves.

DIPHTHERIA CASES IN ELEMENTARY SCHOOLS.

Month.	No. of Cases.	No. of Schools involved.
January	28	23
February	29	24
March	29	23
April	17	17
May	20	18
June	20	17
July	32	24
August	22	19
September	29	23
October	37	30
November	33	27
December	35	23

Mistaken diagnosis in diphtheria.

Of the total number of patients originally reported to be suffering from diphtheria, 510 were removed to the City Hospital, a percentage of 63, as compared with 64 per cent. and 50 per cent. respectively in the two preceding years. Of the 510 cases so removed, 44 were found after admission not to be suffering from diphtheria, that is, a percentage of 8·6, as compared with a percentage of 5·2 in the preceding year. Unlike scarlet fever, none of these patients contracted the disease by reason of being wrongly sent into the hospital. In part this is probably due to the effective arrangements now provided at the hospital for keeping every patient in a separate room until the diagnosis is confirmed or a negative diagnosis made. While this is so, there can be no doubt that under most conditions diphtheria is less liable to spread than many of the other infectious diseases.

Mortality from diphtheria in hospital and at home.

In the following table are set out the number of cases of true diphtheria sent to the City Hospital during each of the past three years, the number of deaths and the percentage mortality, together with identical figures in regard to cases treated at home or in some other institution :—

Year.	CASES TREATED.		DEATHS.		PERCENTAGE MORTALITY.	
	In Hospital.	At Home.	In Hospital.	At Home	In Hospital.	At Home.
1906	389	413	45	48	11	12
1907	617	353	66	34	9	10
1908	466	328	61	44	13	14

Diphtheria and bacteriological examinations.

Of the patients admitted to hospital 83, or 16 per cent., were not examined bacteriologically immediately on admission either on account of the severity of the illness or other cause. Four hundred and twenty-seven patients were bacteriologically examined within 24 hours of admission, that is, 84 per cent., and of these 93 per cent. showed diphtheria bacilli to be present in the throat. This may be regarded as a satisfactory result as indicating that care is taken in the sending of diphtheria patients to hospital.

In addition to the bacteriological examination of the throat on admission, swabs were taken as in former years at intervals during the stay of the patient in hospital with a view to seeing when the diphtheria bacilli disappeared from the throat, and in the following table are set out the figures for the past three years, the year 1908 being remarkable for the long periods during which diphtheria bacilli persisted in the throats of many of the patients. No less than 64 per cent. had living bacilli in their throats for over 40 days. As many as 39 of the cases had living diphtheria bacilli in their throats for over 100 days, while in one case the duration was as long as 193 days.

DIPHTHERIA CASES IN HOSPITAL, 1906-8.

Year.				Days after Admission.
1906	1907	1908		
3·5%	2·0%	0·0%	Were first free from Diphtheria Bac. within	10
3·5%	0·0%	0·5%	,, ,, ,, ,,	10 to 15
4·8%	3·5%	1·0%	,, ,, ,, ,,	15 ,, 20
7·7%	12·2%	4·0%	,, ,, ,, ,,	20 ,, 25
15·1%	15·1%	8·0%	,, ,, ,, ,,	25 ,, 30
12·2%	12·5%	11.1%	,, ,, ,, ,,	30 ,, 35
11·0%	10·5%	10·9%	,, ,, ,, ,,	35 ,, 40
42·2%	44·2%	64·5%	Were not free from bacilli till after	40

In the following table is shown the duration of the organism in the throat in each of the 39 cases mentioned above :—

In	1	case	for	...	...	...	... 193 days
	1	,,	...	...	...	...	... 189 ,,
	1	,,	...	...	...	...	... 180 ,,
	1	,,	...	...	...	...	... 163 ,,
	1	,,	...	...	...	...	... 161 ,,
	1	,,	...	...	...	...	... 149 ,,
	2	,,	...	...	...	...	... 146 ,,
	1	,,	...	...	...	...	... 145 ,,
	1	,,	...	...	...	...	... 142 ,,
	1	,,	...	...	...	...	... 139 ,,
	1	,,	...	...	...	...	... 138 ,,
	1	,,	...	...	...	...	... 133 ,,
	1	,,	...	...	...	...	... 127 ,,
	1	,,	...	...	...	...	... 125 ,,
	2	,,	...	...	...	...	... 118 ,,
	3	,,	...	...	...	...	... 116 ,,
	3	,,	...	...	...	...	... 113 ,,
	3	,,	...	...	...	...	... 112 ,,
	1	,,	...	...	...	...	... 111 ,,
	1	,,	...	...	...	...	... 110 ,,
	2	,,	...	...	...	...	... 108 ,,
	2	,,	...	...	...	...	... 106 ,,
	4	,,	...	...	...	...	... 104 ,,
	1	,,	...	...	...	...	... 103 ,,
	1	,,	...	...	...	...	... 102 ,,
	1	,,	...	...	...	...	... 101 ,,

The members of the medical profession in Birmingham sent to the University for examination at the expense of the Corporation, 624 swabbings with a view to ascertaining whether diphtheria bacilli were present or not. Of these 624 swabs 53 related to persons previously examined. so that the 624 swabs were taken from 571 persons.

The 624 swabs were reported by the University as showing diphtheria bacilli in 226 instances. not showing in 397 instances, and doubtful in one instance. Specimens from 36 per cent. of all the cases of diphtheria admitted to the City Hospital had been examined at the University prior to the patient's removal to hospital.

There were 36 swabs sent to the University showing the presence of diphtheria bacilli from persons who were not subsequently notified as cases of diphtheria. This number compares favourably with the number in the previous year, when 89 such swabs were sent and no notification followed.

Diphtheria and anti-toxin.

The number of boxes of anti-toxin issued, each containing 4.000 units, was 338, as compared with 263 in 1907, and 250 in 1906. As far as can be ascertained this anti-toxin was required for 166 patients. Unfortunately in the poorer districts of the City anti-toxin is not used as extensively as it is in the middle and better-class areas, and this fact is strongly demonstrated in the following table, which shows the number of patients suffering from diphtheria in each ward of the City during each of the past three years, and the approximate number of persons for whom anti-toxin was given out by the University in each ward. In a

good many instances the address of the patient was not given, and in these cases the particular ward to which the patient belonged is not known :—

Ward.	Diphtheria Cases.			Persons for whom anti-toxin was sent.			Average No. of Cases 1906-8.	Average No. of Persons 1906-8.
	1906	1907	1908	1906	1907	1908		
Rotton Park	67	90	75	16	14	13	77	14
All Saints'	72	103	74	18	16	11	83	15
Ladywood	60	53	40	8	5	4	51	6
St. Paul's	27	23	23	4	1	0	24	2
St. George's	24	64	31	0	1	4	40	2
St. Stephen's...	57	59	39	3	6	1	52	3
St. Mary's	20	30	17	2	7	1	22	3
St. Bartholomew's	27	47	25	4	6	0	33	3
Market Hall	13	11	17	0	2	1	14	1
St. Thomas'	19	35	21	3	2	1	25	2
St. Martin's	26	59	48	6	10	9	44	8
Edgbaston and Harborne ...	20	42	47	5	13	9	36	9
Deritend	27	31	27	13	2	5	28	7
Bordesley	110	86	74	32	31	16	90	26
Duddeston	51	63	34	12	2	2	49	5
Nechells	44	52	44	4	2	3	47	3
Balsall Heath	64	62	57	21	22	13	61	19
Saltley...	73	67	72	18	16	15	71	16

WHOOPING COUGH.

Whooping cough caused 313 deaths during 1908, as compared with 188 in 1907. The death rate from this disease during each year since 1878 is set out in the figures below, and from them it will be seen that the mortality rate during 1908 although higher than in the preceding year was not so high as that in 1904, and many previous years. Whooping cough.

DEATH-RATE FROM WHOOPING COUGH.

1878	1·19		1893	·66	
1879	·97		1894	·44	
1880	·55	Average	1895	·35	Average
1881	·90	·88	1896	·76	·53
1882	·79		1897	·45	
1883	·43		1898	·50	
1884	·70		1899	·33	
1885	·61	Average	1900	·58	Average
1886	·23	·58	1901	·42	·47
1887	·91		1902	·50	
1888	·56		1903	·17	
1889	·66		1904	·87	
1890	·47	Average	1905	·29	Average
1891	·66	·59	1906	·46	·43
1892	·59		1907	·34	
			1908	·55	

The disease is one of those which are extremely unsatisfactory from the point of view of their prevention. The vast majority of children, particularly among the artisan classes, pass through an attack, and from the frequency of these attacks and the relatively low mortality of the disease it has come to be regarded as one of those unavoidable ailments of children which need not be taken seriously. As a matter of fact the number of persons who die from it, as well as those whose health is permanently damaged, is very much larger than from any of the other infections diseases, except diarrhœa and, perhaps, occasionally measles. The disease is extremely infectious, and much more fatal in young children than in older children.

The ages of the 313 persons who died during 1908 are given in the figures below :—

Under 1 year	121
1 and under 2 years	118
2 ,, 3 ,, ...	41
3 ,, 4 ,, ...	17
4 ,, 5 ,, ...	11
All under 5 ,, ...	308
5 and under 10 ,, ...	5
All over 10 ,, ...	0

For practical purposes all the deaths take place among children under five years of age, and, therefore, if young infants can be prevented from contracting the disease the mortality will be very much reduced. It is on these lines that the preventive work of the Health Department has been carried on for a number of years. Health Visitors and others during epidemic periods warn parents to be particular in preventing their young children from being exposed to the infection of whooping cough. Unfortunately such a warning can only be of value in a limited number of cases, as the disease is of a highly infectious nature, and spreads from child to child even when the distance between the infectious and the susceptible child is considerable.

As in former years children who themselves have had whooping cough, but in whose homes there is a case of the disease, have been allowed to continue at school. This system has been in operation for some years without apparently any untoward result.

TYPHOID FEVER.

Typhoid fever

The number of new cases of typhoid fever reported during 1908 was 193, as against 248 in 1907, and 191 in 1906. The number of cases in 1908, as will be seen from the appended tables, was smaller than in any previous year with the exception of 1906. The year 1908 comprises

53 weeks, and when this is taken into account, the incidence rate per 1,000 of the population is lower than in any previous year. This may be regarded as a satisfactory statement. Even more satisfactory is the statement that during the past six years typhoid fever has remained uniformly less prevalent than in any preceding year.

While the number of cases was exceptionally low, the disease was of a distinctly severe type, no less than 49 deaths having occurred among the 193 cases of illness, giving a case mortality of 25·4 per cent. The mortality rate of ·09 per 1,000 is similar to that in 1907, but is above that which occurred in 1904, 1905, and 1906. The death rate from "fever" in the whole of England and Wales was ·07 per 1,000 of the population. The towns with the highest rates were Norwich with a rate of ·29 per 1,000, and Wigan with a rate of ·30 per 1,000.

"Fever" in large towns.

Among the twenty large towns the mortality rates for 1908, and for the previous ten years are set out below :—

"FEVER" DEATH RATES IN 20 LARGE TOWNS.

	AVERAGE. 1898-1907.	1908.
London	·10	·05
Liverpool	·20	·11
Manchester	·14	·11
Birmingham	·17	·09
Leeds	·15	·05
Sheffield	·21	·06
Bristol	·09	·02
West Ham	·20	·09
Bradford	·16	·10
Newcastle	·08	·05
Hull	·17	·08
Nottingham	·24	·11
Leicester	·08	·03
Salford	·25	·17
Portsmouth	·23	·12
Cardiff	·08	·04
Bolton	·23	·20
Croydon	·05	·03
Sunderland	·26	·09
Willesden	·07	·04

The following table indicates the number of cases and deaths and the fatality in each year since 1898 :—

Years ...	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Notified Cases	637	779	851	615	544*	348	248	209	191	248	193*
Deaths	113	119	179	111	100*	66	36	38	40	48	49*
Percentage Mortality	18	15	21	18	18	19	15	18	21	19	25

*53 weeks.

Typhoid fever and temperature and rainfall.

The death-rate, sickness-rate, and meteorological conditions for each year since 1887 will be found below :—

	TYPHOID FEVER.		Mean Temperature. degrees Fah., in 3rd Quarter.	Rainfall. in inches for year.
	Death-rate.	Sickness-rate.		
1887	·17	—	58·9	19·80
1888	·14	—	55·7	24·62
1889	·09	—	57·6	24·94
1890	·14	·66	58·0	22·10
1891	·18	·93	57·3	31·14
1892	·08	·54	57·0	25·60
1893	·19	1·00	60·0	20·76
1894	·21	1·04	54·9	25·52
1895	·17	·88	59·6	24·89
1896	·21	·95	57·7	22·27
1897	·18	1·06	58·3	28·21
1898	·22	1·25	58·7	20·45
1899	·23	1·52	61·2	25·12
1900	·35	1·64	60·2	29·09
1901	·21	1·18	60·7	22·64
1902	·19	1·01	57·1	25·98
1903	·12	·65	57·4	33·83
1904	·07	·46	58·8	21·94
1905	·07	39	58·4	22·30
1906	·07	·35	60·9	26·56
1907	·09	·45	57·5	28 86
1908	·09	·34	57·9	26·51

Typhoid fever in four weekly periods

The distribution of cases in four-weekly periods throughout the year is set out below, together with the average in the corresponding four-weekly periods in the previous eighteen years :—

	1908.	Average in 18 years 1890-1908.
Four weeks ending January 25th	22	38
,, ,, February 22nd	17	36
,, ,, March 21st	10	32
,, ,, April 18th	10	31
,, ,, May 16th	11	28
,, ,, June 13th	13	22
,, ,, July 11th	8	18
,, ,, August 8th	4	21
,, ,, September 5th	11	38
,, ,, October 3rd	20	44
,, ,, ,, 31st	24	45
,, ,, November 28th	31	52
,, ,, December 26th	11	43

Typhoid fever in wards.

The sickness-rate in each ward in the City will be found in the following table :—

	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Rotton Park ...	·94	·72	·47	·46	·43	·36	·32	·20
All Saints' ...	1·04	·91	·47	·30	·28	·21	·48	·39
Ladywood ...	1·08	1·07	·44	·36	1·01	·32	·44	·44
St. Paul's ...	1·40	1·09	·71	·32	·19	·46	·35	·64
St. George's ...	1·73	1·52	·44	·59	·69	·49	1·10	·26
St. Stephen's ...	2·02	1·01	·59	1·06	·69	·74	·99	·76
St. Mary's ...	1·83	1·00	·86	1·20	·51	·43	·75	·34
St. B'thol'mew's	1·90	1·27	·79	·46	·36	·24	·69	·57
Market Hall ...	1·43	·63	·32	·22	·44	·21	·11	—
St. Thomas' ...	1·35	1·24	·54	·53	·11	·50	·35	·40
St. Martin's ...	1·09	1·29	·46	·33	·36	·33	·46	·21
Edgbaston and Harborne ...	·52	·45	·58	·26	·29	·18	·15	·15
Deritend ...	1·66	2·04	1·21	·70	·25	·42	·60	·26
Bordesley ...	·86	·92	·65	·38	·33	·35	·33	·18
Duddeston ...	1·51	1·30	1·15	·51	·51	·65	·30	·32
Nechells ...	·89	1·62	·98	·45	·43	·36	·59	·89
Balsall Heath...	·67	·67	·51	·42	·10	·19	·45	·22
Saltley... ...	1·19	·77	·66	·38	·38	·30	·32	·20

It will be seen that the highest rates occurred in Nechells and St. Stephens wards, viz., ·89 per 1,000 and ·76 respectively, while the lowest rates were ·15 per 1,000 in Edgbaston and Harborne ward, and ·18 in Bordesley ward.

For a considerable number of years there have been two outstanding features playing a part in the production of typhoid fever, both of which were capable of remedy, and both of which are now being attacked.

Typhoid fever and pan privies.

The first of these conditions is that of general filth nuisances in the more or less densely crowded parts of the City. The most obvious filth nuisance in Birmingham is that connected with the storage of excrement in the pan closets which at one time were found in every back yard in Birmingham. So bitter and so numerous were the complaints received in regard to nuisance arising from these closets, that the Health Committee many years ago gave instructions that no further pan closets were to be erected. During the year 1903 the problem was tackled of getting rid of the most objectionable of the pan closets at a rapid rate. This work has been going on without interruption during the past six years, during which time there has been a coincident decrease in the amount of typhoid fever in the City.

Everywhere the pan system in town districts has proved itself to be not only disgusting and filthy, but a system which is associated with the prevalence of certain varieties of illness among which typhoid fever is probably the most important. It is safe to say that there is no practical method of getting rid of the nuisance which occurs in pan closets in towns other than by their total abolition. Many methods of dealing with pans have been introduced in

Typhoid fever and pan privies—(*continued*).

various towns in this country, but not one of them deals satisfactorily with the three most objectionable features connected with the system, viz., (1) There is stench from even the best washed pans. The method of washing and tarring which is carried out in Birmingham is probably the best way of dealing with pans, but even in this case shortly after tarring the pans themselves smell most offensively.

(2) There is an extremely offensive nuisance arising from the storing of excrement and urine for a week in a pan, particularly during summer weather.

(3) There is what is probably by far the most objectionable feature of the pan system, and one which is seldom recognised, viz., that it is impossible to work the system without slopping some of the contents of the pan. Pans are filled in certain cases to overflowing, or the adjustment of the pan under the seat is such as not to prevent the fouling of the floor. Again, when the pan is being emptied, even when not very full, it is unreasonable to expect men of the type who are employed in the work to absolutely prevent some spilling of the contents.

In these ways there is a continuous, although perhaps only slight fouling of the floor of the closet, and when a number of these pans are situated together the polluted surface is considerable. This polluted area not only adds to the stench arising from the source above mentioned, but is apparently a breeding ground for typhoid fever and other organisms.

The area in many of our courtyards available for the erection of closets is an extremely small one. Frequently the closets are in close proximity, often directly in front of the dwelling-houses, or in other cases near to the back doors. The majority of people who live in such houses state what is probably quite correct, viz., that when the atmosphere is close as it is in summer time, and particularly during the night, they get the stench from these closets inside their dwellings. Indeed, in visiting such houses it is not at all uncommon to find houses where the stench can be noticed during the day-time inside the dwelling. Pan closets are therefore objectionable—

(1) Because they form real breeding grounds for disease.

(2) Because the unfortunate person who has to use them is confined in an atmosphere which is sickening in many cases owing to its putrescent smell.

(3) Because the stench gets into the houses, and

(4) Because flies undoubtedly carry filth from these closets into the dwelling-houses near and almost certainly into the food in these houses.

There is only one form of closet in town districts which has proved itself to be satisfactory from a sanitary point of view, and that is a properly constructed water-closet. There is always a difficulty in getting water-closets properly

used when first introduced, as might be expected, but after using them for some time most of the people in towns learn to use them with a fair amount of carefulness. Most of the pan closets in Birmingham are over 30 years old. The prohibition against the erection of a pan closet dated from 1885. Typhoid fever and pan privies—(*continued*)

The number of pan closets converted during each year since 1897, together with the number of cases of typhoid fever reported each year, are set out in the following table :—

	No. of Pan Closets converted.	No. of cases of Typhoid Fever reported.
1897	105	533
1898	210	637
1899	199	779
1900	275	851
1901	486	615
1902	871	544
1903	2395	348
1904	2283	248
1905	3580	209
1906	3183	191
1907	2643	248
1908	2426	193

There remain yet in Birmingham about 8,000 pan closets. These are more or less widely scattered, and in the majority of cases the structural condition of them is better than that of the closets that have been converted already. But while this is so, there can be no doubt as to the nuisance arising from those which still remain, and not only the desirability but the necessity of getting rid of them as quickly as possible, if the damage to health which is now taking place is to be prevented. Probably no more striking figures can be given than those above in regard to the relationship between closet accommodation and typhoid fever. Unfortunately, statistics in regard to other diseases cannot be quoted with the same directness, but it is almost certain that other illnesses, such as summer diarrhœa and certain septic diseases, are caused by the same closets.

Typhoid fever and polluted mussels.

Another cause of typhoid fever which while recognised has not been investigated until quite recently is that of the consumption of uncooked shell fish. In regard to this a special report was printed in July, 1908, on the subject of "Mussels and Typhoid Fever," and since then careful observation has been kept on the cases of typhoid fever. During the fourth quarter of 1908 there were 74 new cases reported, and of these no less than nineteen had a history of having consumed mussels shortly before the attack of the illness. As a result of the above-mentioned report, the following poster was published and distributed over the City, and for some months after its issue the number of cases of typhoid fever fell :—

Typhoid fever and polluted mussels— (*continued*).

"CITY OF BIRMINGHAM.

"UNCOOKED MUSSELS.

"In consequence of the danger of some mussels sent into the City being obtained from polluted sources, and possibly, therefore, containing the germs of typhoid fever, the public are recommended to cook all mussels before eating them, to avoid the risk of infection.

"By Order of the Health Committee.

"December, 1908."

Towards the end of the mussel season in April, further cases commenced to occur in which there was a history of mussels or oysters having been consumed. No one who has the practical work of investigating these cases can doubt for a single moment that in a considerable proportion of them the consumption of mussels from contaminated sources was the direct cause of the illness.

On December 31st, 1908, the Health Committee sent the following letter to the Local Government Board in regard to the subject :—

"The Council House.
"Birmingham,
"Town Clerk's Office.
"31st December, 1908.

"Sir,

"SHELL-FISH FROM POLLUTED SOURCES.

"I am desired by the Health Committee to forward to the Board a copy of a report made to them by the Medical Officer of Health for this City upon the above subject. The report shows the fatal results which have arisen in Birmingham from the eating of mussels from polluted sources. In addition to the deaths referred to in the report, there have occurred in Birmingham recently four deaths almost certainly due to eating of oysters from sewage-polluted sources.

"The Health Committee have issued a poster, reduced copy of which I enclose, warning the public against eating uncooked mussels, but they are strongly of opinion that no local action of this character can be a sufficient protection to the public from the serious dangers connected with the eating of shell-fish from contaminated layings. They therefore desire to urge upon the Board the necessity for some general action to protect the sources of supply, and to prevent shell fish from contaminated sources being put upon the market. They regard the matter as of serious

importance, and will be very glad to know that the Board can take steps in the direction indicated.

"I am, Sir,
"Your obedient servant,
"E. V. Hiley,
"Town Clerk.

"The Secretary,
"Local Government Board,
"Whitehall, S.W."

It may be asked why it is that the subject of mussels and typhoid fever has not been brought to light earlier, and the most probable explanation is that in the majority of cases it has been impossible to make enquiry directly of the patient as to the cause of his illness. In most cases when typhoid fever is reported, the inspector of nuisances makes a personal visit to the house of the sufferer with an instruction that he is not to see the patient. In this way he is debarred from making direct enquiry, and therefore it is only in the case of those patients where access is obtained at a period of their illness when they are able to give the necessary information that the history of mussel eating can be made out. In the majority of cases since special enquiry has been made the information has been obtained from the patient's private medical attendant, or from the medical superintendent at the hospital. A considerable number of cases are missed entirely on account of the death of the patient, but when allowance is made for all these conditions it is probable that at least 25 per cent. of the typhoid fever cases occurring during the autumn and spring months of the year give a history of shell-fish having been consumed a short time before the occurrence of the illness.

Any action taken by the Health Committee and the Fish Dealers' Association must necessarily be unsatisfactory. If on the one hand the Health Committee takes action to prevent the sale of shell-fish, the trade in a perfectly wholesome article of food is damaged, while on the other hand, the local wholesale fishmongers have not a sufficiently accurate knowledge of the sources from which mussels and other shell-fish are derived to enable them to take action, so that any action which is to be really effective must come from the Local Government Board, and must have as its chief object the prevention of the sale of shell-fish from polluted sources. It is with this object in view that the above letter was sent at the instigation of the Health Committee to the Local Government Board, and it is hoped that no opportunity will be lost of pressing the importance of this subject on the Board, and it may be confidently anticipated that a perceptible diminution in the number of cases of typhoid fever will follow the enforce-

ment of precautions which have for their object the prevention of the sale of shell-fish from sources many of which are well known to be grossly polluted. As an illustration of such polluted sources one would mention the fact that Belfast Lough is regarded as grossly polluted, the people of Belfast being warned not to gather shell-fish there, and yet shell-fish from this source are sent to our provincial towns.

Typhoid fever mortality in hospital and at home.

Of the cases notified as typhoid fever 110 were removed to the City Hospital. Seven of the cases sent into hospital were subsequently found not to be typhoid fever, a percentage of error of 6·4. None of these patients died. Four of them were suffering from diarrhœa, one from osteomyelitis, one from febricula, and one from pneumonia. Of the 103 genuine cases of typhoid fever treated at the City Hospital, 26 died, which is equal to a mortality rate of 24 per cent. Of the remaining 83 cases treated at home or in some other institution, 23 died, equal to a mortality of 26 per cent. The corresponding mortality rates in the previous year were 19 per cent. in cases removed to the City Hospital, and 26 per cent. among patients treated elsewhere.

Widal's test.

The medical practitioners in Birmingham sent 133 specimens of blood to the University for examination for typhoid fever reaction at the cost of the Health Committee. Twenty-nine of these gave a positive reaction. 96 gave a negative reaction, in seven the reaction was incomplete, and one showed a very indefinite reaction.

DIARRHŒA AND ENTERITIS.

Diarrhœa.

The number of deaths registered as due to diarrhœa during 1908 was 470, as compared with 237 in 1907, and from enteritis 210, as against 168, a total of 680 as compared with a total of 405 in 1907. As in previous reports diarrhoea and enteritis have been grouped together, as to a large extent the difference is rather in the nomenclature than in the nature of the disease.

The death-rate per 1,000 of the population was 1·20, as compared with ·73 in the previous year. The death-rate from diarrhœa alone, as recorded by the Registrar-General, was ·80 per 1,000, as compared with an average of 1·22 in the previous ten years, that is to say, the mortality during 1908, which was obviously a favourable year for summer diarrhœa, was 34 per cent. below the mean rate for the preceding ten years.

Diarrhœa in other towns.

In the following table is set out the average mortality rate in certain large towns during the ten years 1898-1907, together with that for 1908. In the third column is shown the percentage the 1908 rate gives above or below the average for the preceding ten years.

DIARRHŒA ONLY.

Diarrhœa—(*continued*).

	Average 10 years 1898-1907.	1908.	Above or below average.
Average of 76 Great Towns ...	0·81	0·65	-20
London...	0·77	0·53	-31
West Ham	1·49	1·00	-33
Bristol	0·56	0·34	-39
Burton-on-Trent	0·46	0·31	-33
Wolverhampton	1·23	0·44	-64
Walsall	1·25	1·18	- 6
Handsworth	0·34	0·25	-26
West Bromwich	1·10	0·75	-32
Birmingham	1·22	0·80	-34
King's Norton	0·20	0·21	+ 5
Smethwick	0·67	0·62	- 7
Aston Manor	1·47	0·95	-35
Coventry	1·15	0·60	-48
Leicester	1·07	0·50	-53
Liverpool	1·49	0·84	-44
Manchester	1·31	0·92	-30
Burnley	1·55	1·59	+ 3
Preston	1·60	0·97	-39
Leeds	0·91	0·67	-26
Sheffield	1·45	0·87	-40
Newcastle	0·69	0·46	-33
Cardiff	0·60	0·63	+ 5

The mortality from diarrhœa alone varied from ·04 per 1,000 in Hastings, ·11 in Bournemouth, ·16 in Halifax, ·17 in Hornsey, and ·19 in West Hartlepool, to such high rates as 1·24 per 1,000 in Stockport, 1·36 in Hull, 1·59 in Burnley, 1·88 in Middlesbrough, and 1·92 in Rhondda. The mean mortality in the 76 great towns as reported by the Registrar-General was ·65 per 1,000. This was equal to ·21 per 1,000 below the average of the preceding five years, or 24 per cent., a percentage very similar to that in Birmingham.

Diarrhœa at ages.

As in former years the deaths from diarrhœa and enteritis occurred mainly amongst infants during the third and fourth quarters. The details as to age at death are set out in the following table :—

DEATHS FROM DIARRHŒA AND ENTERITIS.

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Under 1 month	1	1	13	3	18
Between 1 and 2 months	3	5	36	8	52
,, 2 and 3 ,,	0	5	38	9	52
,, 3 and 4 ,,	7	7	42	12	68
,, 4 and 5 ,,	4	2	34	9	49
,, 5 and 6 ,,	4	4	38	7	53
,, 6 and 7 ,,	4	1	35	11	51
,, 7 and 8 ,,	1	3	24	10	38
,, 8 and 9 ,,	1	1	18	6	26
,, 9 and 10 ,,	4	1	24	6	35
,, 10 and 11 ,,	0	0	17	6	23
,, 11 and 12 ,,	1	1	20	5	27
Total under 1 year... ...	30	31	339	92	492

Deaths from Diarrhœa and Enteritis—*continued.*

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Total under 1 year ...	30	31	339	92	492
Between 1 and 2 years ...	9	10	62	22	103
,, 2 and 3 ,, ...	2	2	7	3	14
,, 3 and 4 ,, ...	1	1	4	1	7
,, 4 and 5 ,, ...	0	0	2	0	2
Total under 5 years ...	42	44	414	118	618
Between 5 and 10 years ...	2	1	3	2	8
,, 10 and 15 ,, ...	0	0	0	0	0
,, 15 and 20 ,, ...	0	0	0	2	2
,, 20 and 25 ,, ...	0	2	1	1	4
,, 25 and 35 ,, ...	1	1	1	2	5
,, 35 and 45 ,, ...	1	1	0	3	5
,, 45 and 55 ,, ...	2	3	1	0	6
,, 55 and 65 ,, ...	0	4	3	6	13
,, 65 and 75 ,, ...	2	3	5	2	12
,, 75 and 85 ,, ...	2	0	2	2	6
At 85 years and upwards	0	0	0	1	1
All ages	52	59	430	139	680

Diarrhœa and temperature and rainfall.

The relationship between diarrhœa and certain climatic conditions is indicated in the following figures :—

	Deaths during each year.				During 3rd Quarter.			
	Diarrhœa.	Enteritis.	Total.	Death-rate per 1,000.	Mean Temperature.	Mean Temperature of Soil 4ft. deep.	Rainfall in inches.	Days with ·010 or more of rain.
1887	550	60	610	1·46	58·9	—	5·62	31
1888	305	60	365	0·87	55·7	—	9·58	49
1889	465	56	521	1·23	57·6	—	6·62	39
*1890	434	101	535	1·23	58·0	—	7·39	42
1891	320	107	427	0·99	57·3	—	7·27	48
†1892	443	104	547	1·13	57·0	—	9·22	41
1893	828	200	1028	2·11	60·0	—	5·61	46
1894	256	148	404	0·82	54·9	—	7·18	45
1895	605	282	887	1·79	59·6	—	6·45	44
*1896	589	309	898	1·76	57·7	54·6	7·33	47
1897	923	521	1444	2·86	58·3	53·5	7·24	35
1898	668	544	1212	2·37	58·7	54·3	4·50	21
1899	831	580	1411	2·74	61·2	55·9	4·98	34
1900	613	409	1022	1·97	60·2	54·4	5·43	31
1901	792	206	998	1·91	60·7	54·8	5·91	26
*1902	412	122	534	0·99	57·1	52·8	7·51	47
1903	588	136	724	1·36	57·4	52·0	9·85	49
1904	955	155	1110	2·07	58·8	54·1	5·75	31
1905	463	177	640	1·19	58·4	54·1	7·33	34
1906	857	226	1083	1·98	60·9	54·0	2·97	26
1907	237	168	405	0·73	57·5	52·2	6·08	40
*1908	470	210	680	1·20	57·9	52·9	6·94	41

* 53 weeks. † Enlarged City.

From the generally warm dry weather experienced in the early summer it was feared that a high mortality would occur, and with a view to warning the public, posters drawing attention to the danger were widely distributed throughout the City. None of the Health Visitors were permitted to go for their holidays, so that the whole staff might devote their attention to visiting in the areas where diarrhœa is most prevalent, and leaflets were numerously distributed pointing out the best method of preventing the disease in the case of young children.

Diarrhœa and filth conditions.

It has been well known for many years that there is an intimate connection between filth—using the term in its widest sense—and the prevalence of summer diarrhœa. It has been pointed out in previous reports that summer diarrhœa is a disease which occurs only among the residents of the small house property in Birmingham, and that year after year not a single death takes place among the better class artisans and middle classes. There are a large number of conditions which probably contribute to the spread of the disease, and, as already mentioned, these may be included under the term general dirtiness. Unfortunately a large number of the poorer classes keep their dwellings, their clothes, and everything inside the house in a dirty condition. At the same time the surroundings of the houses are allowed to be dirty.

Diarrhœa and flies.

Again, other conditions of dirtiness not under the control of the householder may seriously influence the prevalence of summer diarrhœa. The prevalence of the house-fly, which is well known to coincide with that of summer diarrhœa, is an example of one of these conditions, and it might be mentioned that recently the Corporation of Liverpool have caused an investigation to be made into the life history of this pest. The enquiry in question has demonstrated beyond doubt that the house-fly is bred for the most part in stable manure pits, middens, and heaps of refuse which are in a fermenting condition, and where the necessary warmth and moisture are generated. It is alleged that such flies, bred in manure pits and middens, carry with them the organisms which set up summer diarrhœa to the food partaken of by young infants, and therefore that any crusade directed against the breeding-grounds of flies would not only reduce the number of fatal cases of summer diarrhœa, but would also greatly relieve the dwelling-houses of the nuisance during the hot months of the year.

Diarrhœa and methods of feeding.

As in former years, enquiry has been made by the Health Visitors into the deaths of young children under six months old from diarrhœa in the third quarter of 1908. The results of this enquiry are set out in the following table, together with the figures for the preceding four years :—

Methods of Feeding the Infants under Six Months old who died of Diarrhœa during the Third Quarter of 1908.

AGE.	Number of Deaths.	Breast Alone.	Breast with Spoon Food.	Breast with Bottle.	Bottle with Cow's Milk Alone.	Bottle with Cow's Milk and other Foods.	Bottle with Condensed Milk only.	Bottle with Condensed Milk and other Food.	Other Foods from Bottle or with Spoon.	Boat Bottle used.	Tube Bottle used.
Under 1 month	15	3	1	1	6	1	2	...	1	4	7
1 and under 2 months ...	29	8	5	...	11	1	2	1	1	7	9
2 ,, 3 ,, ...	34	9	5	4	12	2	2	...	...	8	12
Total under 3 months ...	78	20	11	5	29	4	6	1	2	19	28
3 and under 4 months ...	40	3	5	2	24	3	2	1	...	9	23
4 ,, 5 ,, ...	35	6	5	2	13	3	5	1	...	12	13
5 ,, 6 ,, ...	35	1	1	2	20	3	3	2	3	13	20
Total 3 to 6 months ...	110	10	11	6	57	9	10	4	3	34	56
Total under 6 months, 1908	188	30	22	11	86	13	16	5	5	53	84
,, ,, ,, 1907	68	2	8	7	29	14	4	1	3	27	32
,, ,, ,, 1906	327	26	20	42	143	29	32	23	12	78	198
,, ,, ,, 1905	178	16	17	11	82	25	17	8	2	59	84
,, ,, ,, 1904	408	37	14	50	194	67	25	12	9	71	279

INFLUENZA.

The next table shows the deaths from influenza during the past eighteen years :— Influenza.

1891	...	244	1900	...	185
1892	...	88	1901	...	90
1893	...	123	1902	...	76*
1894	...	29	1903	...	63
1895	...	121	1904	...	68
1896	...	41*	1905	...	63
1897	...	59	1906	...	72
1898	...	89	1907	...	81
1899	...	150	1908	...	158*

* 53 weeks.

From these figures it will be seen that the disease caused a larger number of deaths than in any other year since 1900. Eight of the deaths occurred in children under ten years of age, eight between ten and twenty, and 142 at the age of 25 or upwards. Of the deaths 82 were those of males, and 76 were females. The largest number of deaths occurred during the first quarter of the year, being no less than 103. In the second quarter there were 40 deaths, in the third quarter four, and in the fourth quarter eleven.

ERYSIPELAS.

The number of cases and deaths notified from this disease together with the percentage mortality during each of the past ten years will be found in the table below :— Erysipelas.

	Cases.	Deaths.	Percentage Mortality.
1899	629	21	3·3
1900	678	26	3·8
1901	726	23	3·2
1902	762*	30*	3·9
1903	644	22	3·4
1904	597	29	4·9
1905	595	31	5·2
1906	589	23	3·9
1907	599	18	3·0
1908	476*	10*	2·1

* 53 weeks.

It will be noted that the number of notified cases and of deaths was smaller than in any of the previous years. The mortality rate of 2·1 per cent. is also the lowest.

PUERPERAL FEVER.

The number of cases of puerperal fever reported and the number of deaths was in each instance much smaller than in any previous year, as will be seen from the following figures :— Puerperal fever

Puerperal fever (*continued*).

	Cases.	Deaths.
1899	30 ...	14
1900	39 ...	26
1901	32 ...	28
1902	35 ...	22
1903	31 ...	21
1904	36 ...	27
1905	40 ...	24
1906	28 ...	19
1907	47 ...	29
1908	17* ...	8*

* 53 weeks.

The deaths were in the proportion of one in every 2,018 births. A comparison between this figure and those in previous years is given below :—

	Proportion of Deaths to Total Births.
1899	1258
1900	652
1901	598
1902	777
1903	803
1904	626
1905	658
1906	843
1907	539
1908	2018

The number of cases of puerperal fever notified during each four-weekly period since 1892 will be found in the following table :—

	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	Total.
1st ...	0	4	2	3	0	2	3	3	0	2	2	3	5	2	1	3	1	36
2nd ...	2	2	3	0	1	2	1	2	3	1	2	2	3	3	1	6	1	35
3rd ...	1	4	4	0	1	0	1	2	2	0	0	4	0	2	5	5	1	32
4th ...	2	3	1	4	1	1	1	2	3	2	1	6	5	3	4	4	2	45
5th ...	8	4	3	2	2	3	1	3	4	2	3	2	1	3	2	3	0	46
6th ...	3	2	4	1	3	0	0	0	6	3	0	0	2	3	1	3	1	32
7th ...	3	2	4	1	2	0	2	3	3	1	2	2	3	2	3	4	4	41
8th ...	2	5	2	1	2	1	1	2	1	4	5	0	5	3	1	3	2	40
9th ...	3	5	2	2	2	1	2	1	4	4	5	1	2	4	2	2	2	44
10th ...	1	5	1	4	1	0	6	1	2	1	4	1	2	3	0	5	0	37
11th ...	7	6	5	3	6	2	2	2	4	5	3	6	1	5	4	5	0	66
12th ...	4	8	5	2	6	2	1	1	5	4	3	2	3	5	3	4	1	59
13th ...	4	4	6	1	2	3	3	8	2	3	4	2	4	2	1	0	2	51

It will be seen that the largest prevalence of the disease has usually been experienced during the last three months of the year, but in 1908 such prevalence was not noted.

ACCIDENTS OF CHILD-BIRTH.

Child-birth.

Forty-three mothers died from accidents of child-birth, as compared with 27 in the previous year. The 43 so-called accidents of child-birth included three deaths from abortion or miscarriage, eight from puerperal convulsions, eighteen from placenta prævia, five from puerperal thrombosis, two from "parturition," and seven from other diseases. One mother, therefore, died from this group of diseases in every 375 births, a larger number than in any of the previous ten years.

MIDWIVES ACT, 1902.

Number of Midwives.

The number of certified midwives practising in Birmingham, other than those in hospitals approved by the Central Midwives Board, and Workhouse Infirmaries, was on December 31st, 1908, 200, as compared with 221 in 1907, 219 in 1906, and 210 in 1905.

Twelve midwives have left the district during the year, five have given up practice on account of ill-health, and two have died.

Except in the case of institutions, no new midwife commenced to practise her profession during 1908.

In addition to the 200 certified practising midwives there are still about 50 women who are uncertified, and who can continue to practise midwifery till April, 1910. A few of these are in extensive practise, while the majority only attend a few patients per annum.

Of the 200 practising midwives (not including institution midwives) two act only as maternity nurses. Of the remaining 198 twenty-three are trained, while 175 have had no recognised training.

A large number of the practising midwives are old women, many of whom do very little work.

The number of cases per midwife was as follows :—

No. of Cases attended.	No. of Midwives, 1906.	1907.	1908.
Less than 50 births	125	119	96
Between 50 and 100	39	46	42
,, 100 and 150	17	14	14
,, 150 and 200	2	4	6
Over 200	8	7	8

The 198 midwives reported having attended 9,244 births, equal to 47 cases per midwife. The uncertified women are estimated to have attended 500. In addition it is estimated that another 500 births were attended by institution midwives, where a medical officer was available. It may safely therefore be asserted that of the 16,141 infants born in Birmingham in 1908, not less than 10,000, or over 60% were attended by midwives.

Number of Midwives (*continued*).

A point of some importance is that the fees charged by midwives have within the past year or two been increased, probably on an average to the extent of 2s. 6d. per case.

Allowing only ten per cent. for bad debts a midwife who averages 8s. 6d. per case would have to attend over 200 patients per year in order to obtain an income of 30s. per week (£78 per annum).

During 1908, 28 midwives attended over 100 patients each, and therefore had incomes from this source of from 15s. per week to probably £2. The remaining 138 had probably incomes of less than 15s. per week from their calling

The above figures indicate very clearly the unattractiveness of this calling as a sole means of support. Without some subsidiary help it is almost impossible for a woman to commence to practise. Of the 28 midwives attending more than 100 cases each six were salaried district midwives attached to the Lying-in Charity; so that only 22 midwives in Birmingham out of the 198 in practise can be considered as self-supporting on the assumptions used above.

To carry out their duties to their patients as laid down in the rules of the Central Midwives' Board, it is probable that a midwife cannot attend more than 200 labours per annum. On this basis 50 midwives could carry on the work of the 198 midwives practising in Birmingham.

It is to be expected therefore that within a few years there will be a considerable reduction in the number of women practising in Birmingham. At the same time it is to be hoped that the fees charged will be increased so that without working at the maximum rate of 200 labours per annum a midwife may be able to earn sufficient to be self-supporting.

Midwives and medical help.

Each midwife is required to send for a medical practitioner under certain well-defined conditions, and on each of these occasions a note is sent to the Health Department, stating the cause of sending for help.

During 1908 three hundred and forty-three such reports were received, that is in 3·7 per cent. of all the cases attended.

In 1907 the percentage was 3·8. In London, in 1907 it is estimated that the percentage number of occasions for seeking medical help was 8·4 per cent.

The causes for sending for medical help were as follows :

Delayed or difficult labour ...	78	Pelvic Cellulitis	
Hæmorrhage	31	Abdominal pain, etc. ...	24
Abnormal presentation ...	32	Deformity of child... ...	3
Adherent or retained placenta	26	Pleurisy	1
Lacerated perineum... ...	30	Growth on child's neck ...	1
High temperature	19	Breech presentation ...	17
Prolapse of funis	6	Hernia	1
Exhaustion	5	Large child	1
Contracted pelvis	3	Stoppage of the bowels ...	1
Ophthalmia	3	Destitution, etc.	3
Debility of child	18	Convulsions	2
Stillbirth	3	Excessive sickness	1
Abortion	13	Eclampsia	6
Twins	3	Albuminuria...	1
Bronchitis	5	Jaundice	1
Premature birth	13	Unsatisfactory progress ...	1
Influenza	2	Insanity	1
Uterine inertia	2	Cleft palate	1
Debility of mother	3		

Midwives *(continued)*.

In the last annual report it was stated that considerable difficulty was experienced by midwives practising among the poorest mothers in obtaining medical assistance in case of difficulty. The arrangement which came into operation on January 1st, 1908, whereby the Board of Guardians undertake to pay a fee to the nearest medical man called in by a midwife has been of real assistance, and on the whole has not been abused. In 36 instances the nearest doctor was sent for, and the Boards of Guardians paid £56 17s. 0d. for such services. In 39 other instances the poor law medical officer was sent for. Of the £56 17s. 0d. so paid £6 6s. 0d. was recovered from the husbands of the patients.

The scale of fees paid by the Birmingham Board of Guardians has been approved by the Local Branch of the British Medical Association, and varies from a fee of 5s. where a visit only has to be paid, to £2 0s. 0d. in complicated labours.

On October 23rd, 1907, a letter was sent to each midwife asking her to record the temperature in a book supplied by the Health Department once daily during the puerperium of each patient. This requirement has been well carried out, and has had a far-reaching effect in the early recognition of septic conditions. Unfortunately, it is impossible to require illiterate midwives or those whose eyesight is defective to record temperatures. The Midwife Visitor reports that about 50 per cent. of all the midwives record the temperature of their patients.

Three midwives were summoned to appear before the Health Committee, the charges against them being as follows :— Neglect of rules by midwives.

February 25th, 1908, *Midwife No.* 6614.—Charged with not calling in medical assistance in case of serious illness,

Neglect of rules by midwives—(*continued*).

and for not continuing in attendance for the first ten days following confinement.

Reprimanded by the Health Committee.

March 25th, 1908, *Midwife No.* 2253.—Charged with neglecting to take the necessary antiseptic precautions, and also with not continuing in attendance for ten days following confinement.

Reprimanded by the Health Committee.

June 23rd, 1908, *Midwife No.* 7096.—Charged with not calling in medical assistance sooner in case of obvious illness. (Patient died).

Reprimanded and cautioned by the Health Committee.

For other minor irregularities printed notices were served as follows :—

February 18th, 1908, *Midwife No.* 12734.—Charged with not wearing suitable clothing when in attendance at confinements, and not using the necessary apparatus.

March 17th, 1908, *Midwife No.* 6694.—Charged with not providing herself with the necessary apparatus and not keeping a register of cases.

June 17th, 1908, *Midwife No.* 20696.—Charged with not notifying birth of still-born child.

June 19th, 1908, *Midwife No.* 249.—Charged with not providing herself with the necessary apparatus and a supply of disinfectant.

STILL-BIRTHS.

Still-births.

The whole question of dealing with still-births is at present exceedingly unsatisfactory.

By the Notification of Births Act it is obligatory to report to the Medical Officer of Health "the necessary information of the birth" of the child alive or dead (born after the 28th week, of pregnancy). It is not necessary to state on such notification whether the child was premature or not, or whether it was still-born or not. So that unless specific inquiry is made no information is available as to whether the child was still-born or not.

Under the Midwives Act each still-birth is required to be reported by the attending midwife, with a statement as to whether each was premature or not, and as to whether the infant was macerated or not.

The midwives reported 248 still-births during 1908. This is at the rate of 2·78 per cent. The figure for London in 1907 was 2·5 per cent.

It appears to be doubtful whether all still-births are reported by the midwives, as the rate for Birmingham is relatively a low one compared with those found and regis-

Still-births—(*continued*).

tered under somewhat different conditions in foreign countries. In Germany, the rate was 3·2 per cent.; in France 4·7 per cent.; at the Royal Maternity Charity, London, the rate was 3·5 per cent.; at the Birmingham Lying-in Charity, 1908, 2·1 per cent.; and of the notified births under the Notification of Births Act the rate was 2·6 per cent.

If we assume that the rate actually was 3·5 per cent. it would mean that about 75 still-births have not been reported by the midwives.

In regard to each still-birth, the midwife is required to supply information as to the period of gestation, the condition as to maceration, and the presentation.

Condition of Child and Presentation.	Total still births.	Period of Gestation.				
		Full time.	8 months.	7 months.	6 months.	Under 6 months.
Macerated	98	35	19	25	14	5
Not macerated ...	150	67	12	23	35	13
Vertex	158	72	19	30	27	10
Breech	37	13	8	6	9	1
Footling	16	4	1	7	3	1
Transverse	11	5	1	2	3	—
No information ...	26	8	2	3	7	6

The information supplied by the midwives gives some indication as to the number of children who might possibly under more favourable conditions or with more skilful treatment have been born alive, *e.g.*, 67 of the full-term children were born without any signs of maceration, and twelve of the eight-months children were so born.

TUBERCULOSIS.

Tubercular diseases.

It is satisfactory to be able to record that during the year 1908 considerable progress has been made both generally throughout the country and particularly in Birmingham in endeavouring to eradicate this preventable disease.

As has been pointed out in previous reports, the disease is an infectious one, in some cases almost as obviously highly infectious as other diseases in the group of principal zymotics. The fact of its infectiousness, however, is masked by the length of time which elapses between the reception of the infection and the first symptoms of the disease. It is only those who are brought into intimate contact with notified cases of the disease who can appreciate the infectious nature of tuberculosis in its various forms.

Tubercular diseases—(*continued*).

The total number of deaths from this disease and also the death-rate are shown in the following table :—

DISEASE.	1897	1898	1899	1900	1901	*1902	1903	1904	1905	1906	1907	*1908
Abdominal Tuberculosis	57	64	78	104	131	92	113	107	94	68	77	53
Tubercular Meningitis	79	102	63	56	88	63	73	73	68	75	73	72
Phthisis	679	718	841	847	903	874	754	806	759	672	675	741
Other forms of Tuberculosis	122	70	96	71	83	64	85	85	78	69	97	87
Total deaths	937	954	1078	1078	1205	1093	1025	1071	999	884	922	953
Mortality rate	1·86	1·87	2·10	2·08	2·30	2·04	1·93	2·00	1·84	1·62	1·67	1·67

*53 weeks.

From this it will be seen that during the past three years the mortality rate from tuberculosis has varied from 1·62 per 1,000 to 1·67 per 1,000, and also that during these three years the mortality rate has been lower than in any of the preceding years. This is satisfactory, and must be an encouragement to much greater effort in the near future than in the past.

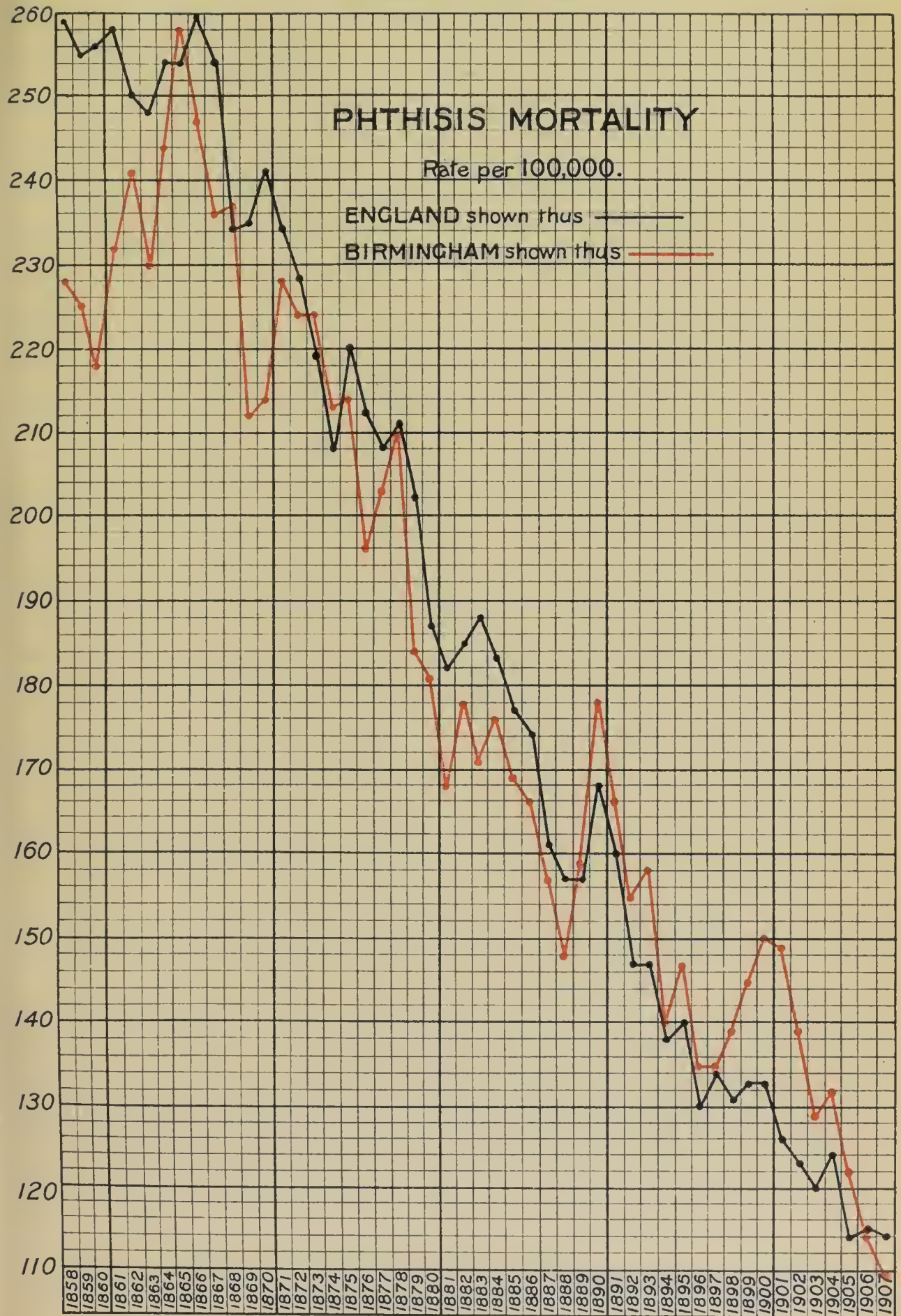
Exactly corresponding figures to those in the table cannot be given for a long period of years, and therefore in constructing the accompanying chart only deaths from that form of tuberculosis which attacks the lung (phthisis) have been taken, and as the figures for Birmingham alone are not available, the Registrar-General's figures for the Birmingham registration districts have been used. These sufficiently illustrate the point that the mortality from phthisis is a diminishing one.

A larger number of deaths occurred from tubercular diseases in Birmingham as elsewhere than from any other single cause, and yet it is difficult to obtain comparative figures whereby our progress may be compared with that in other large towns and adjoining districts. In 1908, tuberculosis was responsible for 11 per cent. of the total mortality in Birmingham from all causes. The largest number of deaths are those due to tuberculosis of the lung (phthisis), the death-rate from which was equal to 1·30 per 1,000 of the population in 1908. In England and Wales the mortality during the years 1902-1906 was 1·19 per 1,000.

Phthisis in males and emales.

As in previous years the mortality rate was much higher among males than among females, as is seen in the following figures :—

CHART No. 4.


PHTHISIS MORTALITY
Rate per 100,000.
ENGLAND shown thus
BIRMINGHAM shown thus
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
1858
1859
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1900
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1903
1904
1905
1906
1907

	Males.	Females.
1904	2·00 ...	1·03
1905	1·94 ...	0·89
1906	1·66 ...	0·82
1907	1·67 ...	0·80
1908	1·85 ...	0·79

If instead of taking all males and all females we take only the males and females who die from pulmonary phthisis between the ages of 15 and 55, and calculate a rate per 1,000 living at these ages we get the following figures :—

	Mortality among Males.	Mortality among Females.
1907	2·36 ...	1·09
1908	2·67 ...	1·09

Death-rates at various ages.

In the following table will be found the number of deaths from tubercular diseases at various ages, together with the mortality rates during 1908 :—

	Abdominal Tuberculosis.		Tubercular Meningitis.		Phthisis.		Other forms of Tuberculosis.	
Ages.	Deaths.	Rate per 1,000	Deaths.	Rate per 1,000	Deaths.	Rate per 1,000	aths.	Rate per 1,000
0	17	1·13	23	1·73			13	·86
1	13	·95	15	·95			13	·95
2	4	·29	19	·94	15	·22	6	·43
3	3	·23	4	·30			5	·38
4	4	·31	2	·16			1	·08
5	4	·07	7	·12	8	·14	9	·15
10					12	·21		
15					39	·66		
20					46	·75		
25					201	2·08		
35	8	·02	7	·02	177	2·57	40	·09
45					155	3·20		
55					61	2·06		
65					26	1·78		
75					1	·24		
85					0	—		

In addition to the indirect methods of preventing phthisis, which must always be the more important, viz., better housing, better workshop conditions, and better feeding, the Health Committee have for a number of years been dealing with the problem of the prevention of phthisis by direct attack on the disease as an infectious one.

Notification of Phthisis.

In March, 1905, voluntary notification of phthisis came into operation, the conditions of such voluntary notification as regards payment being precisely similar to that for other infectious diseases, so that adequate payment is made for the trouble taken by medical men in diagnosing and reporting the cases. Since voluntary notification was introduced, the following number of new cases has been notified each year :—

1905	666
1906	658
1907	751
1908	865

Notification of phthisis—(*continued*).

It will be seen that the number of notified cases was considerably larger in 1908 than in any previous year, and there is undoubtedly a growing inclination on the part of the medical profession to notify cases where some good may be done by such notification.

The feature of the greatest importance during the year was the issuing of the Public Health (Tuberculosis) Regulations Order, dated 18th December, 1908. By this Order every medical officer of a poor law institution is required to notify cases of pulmonary tuberculosis occurring among inmates of such institution. The district medical officers are also required to notify cases occurring in their practice, while superintending officers of Poor Law institutions have to notify the addresses of all persons discharged from poor law institutions, and relieving officers must notify changes of address of poor persons suffering from phthisis. This Order makes compulsory the notification of exactly the kind of cases which most urgently need to be notified, and it is sincerely to be hoped that such an Order will be extended in the near future to all cases of tuberculosis.

Having obtained information as to the existence of a case of tuberculosis of the lung a visit is paid by the tuberculosis inspector, who gives instructions as to preventing the spread of infection from the patient to other members in the household. At this visit printed leaflets are left and advice as to disinfection, etc., is given. In all cases the patient or the patient's friends are found to welcome such advice, and in a large number of cases on re-visiting it is found that the advice is being acted upon. By this and other methods the community are undoubtedly becoming aware of the infectiousness of tuberculosis, and are more willing to carry out the various instructions issued from time to time.

Another aspect of the work of prevention of infection is that in regard to the disinfection of houses after the removal or death of a patient, and in this connection 724 houses were disinfected during the year.

Phthisis and bacteriological examinations.

Appended is a statement showing the work done in the bacteriological examination of sputa from suspected cases of phthisis during the year 1908 :—

Total number of sputa examined during year	419	
,, ,, positive results	138	
,, ,, negative results	281	
Number of positive results notified ...	82	or 59·4%
,, ,, ,, ,, not notified	56	or 40·6%
,, ,, negative results notified ...	5	or 1·8%
,, ,, ,, ,, not notified	276	or 98·2%

Salterley Grange Sanatorium.

On October 15th, 1908, the Salterley Grange Sanatorium was opened by the Lord Mayor, Alderman Sayer, who during his period of office took a great deal of interest in the selection of the site and the construction of the buildings.

Salterley Grange Sanatorium—*(continued)*.

The sanatorium is the first purely rate-supported institution in this country. It is also probably unique in certain other respects, particularly in that it is designed to take those early cases of the disease which are in such a condition that they will readily respond to treatment, and may be expected to be permanently benefitted by such treatment. Statistics from other institutions where patients are accepted in all stages of the disease are distinctly bad, but where early cases alone are dealt with it may reasonably be hoped that a large percentage of the patients will have their lives saved by means of the institutional treatment.

The grounds of the Sanatorium are extensive, and in one part are well-wooded. The site is over 800 feet above sea level and is sheltered by rising ground to the north (965 feet O.D.), and to the east (900 feet O.D.).

Each patient is accommodated in a separate room with the object of making him familiar with the best way of arranging his own small room when he returns home. The buildings are all of brickwork, "rough cast" on the outside, the inside walls being smooth plastered.

Obviously one of the most important, and at the same time most difficult problems is the selection of suitable cases for the sanatorium. In order to accomplish this the Health Committee forwarded a letter, a copy of which is reprinted below, to each medical practitioner in Birmingham, together with a booklet of certificate forms, a copy of which is also printed below :—

"CITY OF BIRMINGHAM.

"Health Department.
"The Council House.
"October, 1908.

"Dear Sir,

"SALTERLEY GRANGE SANATORIUM.

"The above institution will be opened for the reception of Birmingham patients, free of charge, on or about November 1st. Patients will be examined for admission on the recommendation of their private medical attendants.

"As the accommodation is limited (40 beds), it will be only possible to admit patients who are suffering from Tuberculosis of the lung in an early stage of the disease, and who are likely from all the circumstances to permanently benefit by Sanatorium treatment.

"All patients will have to undertake to stay at least three months in the institution if required, and to report themselves for examination at intervals during the two years following discharge.

"In the case of private patients the medical attendant will be kept informed as to their progress, etc., so far as this

Salterley Grange Sanatorium—(*continued*).

is practicable, in order that he may continue the medical supervision after the patient leaves the Sanatorium. It is hoped that with the very careful selection of cases and the long subsequent general supervision satisfactory results will be obtained.

"In order that the selection may be properly carried out, the Health Committee have appointed Dr. Douglas Stanley as examining physician, with an instruction that he shall admit only patients, male or female, who are likely to be permanently benefitted by the treatment.

"In the first instance I shall be obliged if you will please let me have the names and addresses of any patients whom you think suitable, and I will inform them of the time and place of the examination by Dr. Stanley. As far as possible the result of such examination will be communicated to the patient's private medical attendant.

"I herewith enclose forms for reporting suitable cases.

"Yours faithfully.

"JOHN ROBERTSON,
"*Medical Officer of Health.*"

"SALTERLEY GRANGE SANATORIUM.

"To the Medical Officer of Health for the City of Birmingham.

"I certify that in my opinion ..... aged ..... residing at ..... is suffering from Tuberculosis of the Lung in an early stage, and I desire that the Examining Physician should examine ..... with a view to admission to the above Sanatorium.

"(Signed) .....
"(Address) .....
"Date....."

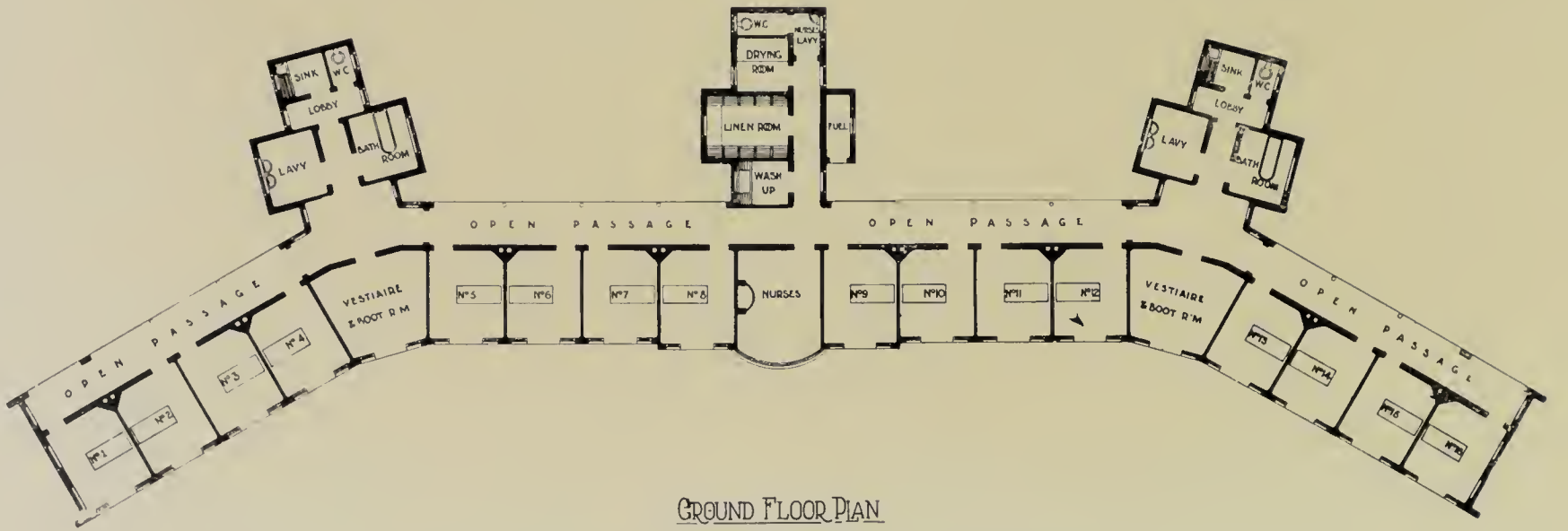
Having obtained from medical practitioners the names and addresses of possibly suitable cases, the services of one of the consulting physicians in Birmingham were engaged to examine each patient recommended for treatment. In this way it is hoped to prevent the admission of persons whose disease was too far advanced to reasonably expect permanent arrest.

It was intended to commence admitting patients immediately after the opening ceremony, but on account of the electric light and pumping machinery not being in position no patients were admitted until January 9th, 1909.

Tuberculosis and milk supply.

In addition to the measures mentioned above considerable work was done during the year in the direction of preventing milk infected with tubercle bacilli being delivered

SALTERLEY GRANGE SANATORIUM.



GROUND FLOOR PLAN

Ground Plan of one of the large Blocks.

SALTERLEY GRANGE SANATORIUM.

Front View of two of the large Blocks, each containing sixteen rooms.

Photograph showing in detail the Front View of one of the large Blocks.

SALTERLEY GRANGE SANATORIUM.

Open Corridor passing along the whole length of each Block at the back of the Patients' Rooms.

This Corridor has already been found to be of much use in warm weather, the front of the buildings then being extremely hot in the daytime.

SALTERLEY GRANGE SANATORIUM.

Fittings for the interior of one of the Patients' Rooms.

Tuberculosis and milk supply —(*continued*).

to the general public. A conference was convened in Manchester at the instigation of your Committee of representatives of five of the large towns where practical experience had been gained in the administration of the model milk clauses, each of these towns being able to speak as to the extent of tubercular milk in the ordinary milk supply. After considerable debate it was decided to ask for an interview with the President of the Board of Agriculture and Fisheries and the President of the Local Government Board with a view to pressing the Government to take up the subject of the prevention of cattle tuberculosis. At the same time a circular letter was drafted to be sent to each sanitary authority in England setting forth the salient points which required attention and asking for their assistance. The letter in question is reprinted below :—

"The Council House,
"Birmingham,
"March 21st, 1908.

"Sir,

"TUBERCULOSIS AND THE MILK SUPPLY."

"A Conference was held at the Town Hall, Manchester, on Friday, February 28th, of delegates representing the Public Health Committees of the cities of Liverpool, Manchester, Birmingham, Leeds, and Sheffield in regard to the danger to man of milk containing the living infection of tuberculosis.

"Each of the above cities has had by reason of local Acts of Parliament considerable experience in the examination of samples of dairy milks for this infection. The result of this experience may be briefly stated by saying 'that the milk in abont ten per cent. of the churns sent into these towns contains the living infection of tuberculosis.'

"From experience elsewhere it is almost certain that this high proportion is exceeded in many districts.

"The report of the Royal Commission on tuberculosis issued in January, 1907, states that 'there can be no doubt that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of Bovine Tuberculosis; and there can also be no doubt that in the majority at least of these cases the bacillus is introduced through cows' milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis, and of fatal tuberculosis in man.'

"With this important statement, and the knowledge that in their own towns the amount of infected milk was large, the Conference decided to approach the Government with a view to getting effective steps taken to eradicate Bovine Tuberculosis.

Tuberculosis and milk supply —(*continued*.)

"The Conference felt much strengthened in urging adequate preventive measures by the knowledge that any steps which will effectively deal with tubercle-infected milk will at the same time benefit all consumers of milk in the direction of ensuring a cleaner supply. And again, they feel that the direct benefit to farmers and butchers in preventing loss due either to the reduced value of the stock or to the seizure of tubercular meat intended for human food will be an important one.

"The Conference passed the following resolution :—

"'That having regard to the experience of the five towns whose delegates have conferred on this subject, and also to the return recently made to the House of Commons at the request of Dr. Rutherford, a representation be made to the Presidents of the Local Government Board and the Board of Agriculture and Fisheries with a view to inducing these Boards to take effective steps to enforce uniformly throughout the country proper and suitable inspection of dairies and cowsheds, and for regulating the construction of such dairies and cowsheds so as to ensure cleanliness and suitable hygienic conditions ; and further, that the Government be respectfully asked to include in their prospective legislation dealing with milk, clauses calculated to bring about the eradication of tuberculosis from bovines within a measurable period of years.'

"It is intended to present this resolution to both the Local Government Board and the Board of Agriculture.

"The Conference felt that the subject is of much importance to every town, and therefore requested that your authority be communicated with in order that you may take steps either by memorial or otherwise to urge the present Government to deal effectively with this important subject, and that you may also ask your members of Parliament to help in every possible way.

"I am,

"Yours faithfully,

"THOMAS FLETCHER,

"*Chairman of the Conference, and*
"*Chairman of the Health Committee*
"*of the Corporation of Birmingham.*"

In order to be able to press for the elimination of tuberculosis among dairy stock it was felt that it was desirable to have first-hand information as to the methods adopted in Denmark and Germany, where attempts had been made to limit the disease ; and as a consequence a small deputation from the Health Committee was appointed to visit certain districts on the Continent. The deputation left for Denmark on June 6th, and visits were made to a considerable

number of farms, dairy premises, laboratories, etc., and a large amount of information was obtained. This information was presented to the Health Committee in a report dated August, 1908. The consideration of the report in question has necessitated subsequent enquiry, and as the recommendations of the Health Committee based on the report have not yet been approved by the City Council it is impossible here to say more than that it is hoped that a real advance will be made by the adoption of the suggestions put forward in the report. Tuberculosis and milk supply —(*continued*).

While this report is passing through the press the text of the Milk and Dairies Bill, 1909, has been published, together with the Order of the Board of Agriculture and Fisheries in regard to the scheduling of tuberculosis.

With these measures in view it is evident that the attack on tuberculosis among human subjects, derived from the lower animals, will in the near future be a real and important one.

OTHER CAUSES OF DEATH.

Syphilis.—There were 35 deaths registered as due to syphilis, as compared with 32 in the previous year, and 35 in 1906. Nearly the whole of these deaths, viz., 26, were in infants under one year of age. Syphilis.

Alcoholism.—Twenty-four deaths were certified as due to alcoholism. During the past ten years the number of deaths have been as follows :— Alcoholism.

DEATHS FROM ALCOHOLISM.

1899	...	43	1904	...	32
1900	...	27	1905	...	19
1901	...	44	1906	...	21
1902	...	24*	1907	...	20
1903	...	31	1908	...	24*

*53 weeks.

Closely related to the deaths from alcoholism are those from cirrhosis of the liver. The figures for each of the past ten years are as follows :—

		Alcoholism.	Cirrhosis of Liver.	Total.
1899	...	43	92	135
1900	...	27	111	138
1901	...	44	94	138
1902	...	24*	95*	119*
1903	...	31	100	131
1904	...	32	71	103
1905	...	19	80	99
1906	...	21	71	92
1907	...	20	74	94
1908	...	24*	59*	83*

*53 weeks.

Cancer.

Cancer.—The number of deaths from cancer in Birmingham was 441, as compared with 419 in the previous year. The mortality from the disease in Birmingham during the past ten years and the death rate in Birmingham and England and Wales for the same period are set out below :—

	Total deaths from Cancer in Birmingham.	Death-rate per 1,000 in Birmingham.	Death-rate per 1,000 in England and Wales.
1899	386	... ·75	... ·83
1900	368	... ·71	... ·83
1901	395	... ·76	... ·84
1902	383*	... ·72	... ·84
1903	413	... ·78	... ·87
1904	400	... ·74	... ·88
1905	437	... ·81	... ·88
1906	460	... ·84	... ·92
1907	419	... ·76	... ·91
1908	441*	... ·78	... —

*53 weeks.

The mortality from cancer among males and females at different ages was as follows :—

	Deaths from Cancer during 1908. Males.	Females.	Total.
Under 1 year	0	0	0
1 and under 5 years	1	1	2
5 ,, 10 ,, ...	1	0	1
10 ,, 15 ,, ...	1	0	1
15 ,, 20 ,, ...	1	0	1
20 ,, 25 ,, ...	2	1	3
25 ,, 35 ,, ...	7	4	11
35 ,, 45 ,, ...	18	33	51
45 ,, 55 ,, ...	38	46	84
55 ,, 65 ,, ...	59	73	132
65 ,, 75 ,, ...	53	64	117
75 ,, 85 ,, ...	11	23	34
85 and upwards	1	3	4
Total	193	248	441

The mortality rate from cancer in each district of the City during the past five years is shown in the following table :—

	1904.	1905.	1906.	1907.	1908.
Rotton Park	·97	·87	·73	·73	·79
All Saints'	·77	·88	·85	·64	·71
Ladywood	1·03	1·01	·81	1·01	·85
St. Paul's	·57	·96	·86	1·11	·78
St. George's	·39	·59	·78	·55	1·03
St. Stephen's	·64	·77	·87	·52	·76
St. Mary's	·38	·71	1·30	·45	·92
St. Bartholomew's ...	·85	·73	·85	1·04	1·32
Market Hall	·76	·88	·74	·67	·23
St. Thomas'	·37	·81	1·16	·81	·63
St. Martin's	·86	·85	·79	·79	·85
Edgbaston & Harborne	·96	1·00	1·01	·87	·91
Deritend	·79	·93	1·47	1·04	·79
Bordesley	·70	·58	·70	·78	·89
Duddeston	·72	·90	·74	·74	·72
Nechells	·66	·64	·89	·71	·70
Balsall Heath	·87	·99	·83	·90	·82
Saltley	·58	·66	·65	·57	·72

Premature Birth.—In the next statement will be found the mortality from premature birth in Birmingham, compared with that in England and Wales :— Premature birth.

	Deaths.	Death-rate per 1,000. Birmingham.	Death-rate per 1,000. England and Wales.
1899 ...	367 ...	·71 ...	·58
1900 ...	353 ...	·68 ...	·57
1901 ...	349 ...	·67 ...	·57
1902 ...	361* ...	·67 ...	·57
1903 ...	365 ...	·68 ...	·57
1904 ...	377 ...	·70 ...	·58
1905 ...	304 ...	·56 ...	·55
1906 ...	323 ...	·59 ...	·55
1907 ...	319 ...	·58 ...	·52
1908 ...	338* ...	·60 ...	—

* 53 weeks.

Bronchitis.—The number of deaths from bronchitis, viz., 922, was practically identical with that in the preceding year, the mortality rates for this disease being as follows :— Bronchitis.

	Death-rate per 1,000. Birmingham.	Death-rate per 1,000. England and Wales.
1899 ...	— ...	1·61
1900 ...	— ...	1·69
1901 ...	2·06 ...	1·36
1902 ...	1·88 ...	1·32
1903 ...	1·69 ...	1·11
1904 ...	2·00 ...	1·25
1905 ...	1·62 ...	1·14
1906 ...	1·61 ...	1·03
1907 ...	1·67 ...	1·21
1908 ...	1·63 ...	—

Pneumonia.—This disease caused 718 deaths, as against 867 in the previous year. The mortality rates from this disease in Birmingham and in England and Wales are given below :— Pneumonia.

	Death-rate per 1,000. Birmingham.	Death-rate per 1,000. England and Wales.
1899 ...	— ...	1·25
1900 ...	— ...	1·37
1901 ...	1·73 ...	1·15
1902 ...	1·60 ...	1·41
1903 ...	1·45 ...	1·22
1904 ...	1·67 ...	1·28
1905 ...	1·49 ...	1·30
1906 ...	1·40 ...	1·22
1907 ...	1·57 ...	1·34
1908 ...	1·27 ...	—

In the following table will be found the number of deaths at different ages from lobar pneumonia, lobular pneumonia, and pneumonia not defined :—

Ages.	Lobar Pneumonia.	Lobular Pneumonia.	Pneumonia undefined.
0	7	143	27
1	11	149	40
5	1	8	3
10	—	2	2
15	10	—	—
20	6	1	6
25	15	3	30
35	20	8	28
45	15	13	24
55	22	14	31
65	11	11	23
75	5	9	14
85	1	4	1

Suffocation.

Accidental Suffocation.—The deaths from this cause numbered 93, compared with 81 in 1907 and 93 in 1906. The death-rates for Birmingham and England and Wales during the past ten years are given below :—

	Birmingham.	England and Wales.
1899 ...	·19 ...	·07
1900 ...	·19 ...	·07
1901 ...	·18 ...	·06
1902 ...	·14 ...	·06
1903 ...	·19 ...	·06
1904 ...	·18 ...	·06
1905 ...	·15 ...	·05
1906 ...	·17 ...	·05
1907 ...	·15 ...	·05
1908 ...	·16 ...	—

Of the 93 deaths from suffocation 79 were those of infants who were overlaid.

Violent deaths.

Deaths from Violence.—The Annual Summary of the Registrar-General gives the following death rates from violence during 1908 :—

London	...	0·57	Leeds	...	0·57
Liverpool	...	0·74	Sheffield	...	0·56
Manchester	...	0·72	Bristol	...	0·43
Birmingham	...	0·64	Bradford	...	0·52

Deaths in institutions.

Deaths in Public Institutions.—According to the Registrar-General's annual summary, there were 2,344 deaths in public institutions in Birmingham, or 26 per cent. of the total deaths. In other large towns the percentages were :—London, 40 ; Liverpool, 34 ; Manchester, 26 ; Sheffield, 22 ; Leeds, 17 ; Bristol, 23. In the districts around Birmingham they were :—Handsworth, 7 ; West Bromwich, 17 ; King's Norton, 9 ; Smethwick, 11 ; Aston Manor 12.

DISINFECTION.

Disinfection.

The following statement shows the number of houses and the articles of clothing and bedding disinfected during the year: —

	1904	1905	1906	1907	1908
Houses disinfected after Small-pox	10	32	0	0	0
,, ,, ,, Puerperal Fever	38	35	26	33	12
,, ,, ,, Scarlet Fever	1508	1487	1611	2258	2102
,, ,, ,, Diphtheria and Croup ...	553	636	691	972	735
,, ,, ,, Typhoid Fever	237	190	172	217	167
,, ,, ,, Phthisis ...	564	649	554	692	724
Beds and Mattresses disinfected ...	6564	6788	6456	8072	7776
Sheets, Blankets and Counterpanes disinfected	11156	9877	10316	12442	11837
Pillows and Bolsters disinfected ...	6986	6894	6970	8972	8091
Garments disinfected	13167	9946	10693	10310	11251
Carpets disinfected	2457	2164	2335	2858	2398
Other Articles disinfected	9940	8937	10529	10438	9369

CITY HOSPITALS.

City Hospitals.

The following table shows the number of patients* admitted to the City Hospitals since they were first opened by the Corporation: —

	Smallpox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.
1874	194	...	...	...
1875	420	20	...	...
1876	11	38	...	...
1877	38	43	...	...
1878	20	424	...	...
1879	4	184	...	...
1880	16	170	...	...
1881	17	333	...	...
1882	105	627	...	...
1883	1090	638	...	...
1884	437	360	...	...
1885	81	204	...	...
1886	2	428	...	...
1887	10	438	...	...
1888	18	528	...	...
1889	0	1801	...	...
1890	0	2525	...	...
1891	44	1225	...	...
1892	24	1131	...	...
1893	963	1339	...	...
1894	2050	1539	...	...
1895	98	2595	...	...
1896	14†	2812	...	...
1897	0	1641	...	...
1898	0	1083	...	...
1899	0	1052	...	...
1900	0	1814	...	...
1901	0	2959	...	229
1902	68	4534	...	119
1903	250	2455	...	14
1904	8	1437	...	119
1905	36	1489	321	109
1906	0	1557	425	121
1907	0	2243	650	153
1908	0	2062	510	110

* In a small percentage of the cases the disease proved not to be that for which the patient was admitted.

† Removed to Aston Smallpox Hospital, by arrangement with the District Council.

Particulars as to the work of the hospitals are given under the heading of the special diseases.

DISEASES OF ANIMALS COMMUNICABLE TO MAN.

The following report has been supplied by Mr. J. Malcolm, F.R.C.V.S., the Veterinary Superintendent, who deals with all matters relating to the diseases of animals which may be spread to man.

Glanders and Farcy.

"*Glanders and Farcy.*—The number of cases of glanders certified in Birmingham last year shows a marked increase compared with the numbers in previous years, there being 100 cases recorded in 1908 against 48, 33, 25, and 34 for the years 1907-6-5-4 respectively. At first sight it might be assumed from this that the disease had been more prevalent than formerly, but, as a matter of fact, this is not the case; indeed, it is quite the contrary, and glanders is now eradicated in Birmingham. The increase in the number of cases recorded is simply the natural result of the better detection of latent cases secured under the Board of Agriculture's Glanders or Farcy Order of 1907, which came into operation on January 1st, 1908. This Order provides for the payment of compensation by the Local Authority to horse owners to the extent of half the value of the horses condemned under the mallein test up to a maximum value of £50 per horse; it gives the Inspector power to stop all suspected or in-contact horses from going to work; and it makes it obligatory on the Local Authority, at the request of the owner, to test by mallein all such detained horses. The beneficial effect of this Order was soon apparent here. Many latent cases of the disease impossible to recognise by other means were speedily diagnosed by the mallein test.

"It will be seen by the returns below that the application of this Order nearly eradicated the disease during the first three months of its operation, that subsequent to this only five cases occurred, and that from September 26th there has been no case or suspected case of glanders in Birmingham. The actual monthly returns of cases certified in 1908 were as follows:—

January ...28	April ...1	July ...0	October ...0
February ...55	May ...0	August ...0	November. .0
March ...12	June ...2	September...2	December...0

From these returns it is clear that, so far as Birmingham is concerned, the new Order has been an unqualified success. Under it in nine months we have succeeded in eradicating the disease, and thus

in this short period secured a result which many years' continued effort failed to effect under the old Order.

"The horse owners welcomed the new Order, and did all in their power to aid the Local Authority in the attempt to stamp out the disease. Partly owing to this ready co-operation, but mainly to the wide interpretation put upon the meaning of suspected or in-contact horses, the rapid success achieved is due. In every stud where the disease was found to exist every horse was deemed a suspected animal until proved free by the mallein test. The cases revealed by the test showed the necessity for this procedure. The infected horses, probably owing to the general use of a common water-trough at each stable yard, were found to be irregularly distributed throughout the stables. Sometimes they were found at the opposite ends of the stable, sometimes in contiguous stalls, and sometimes they were standing here and there throughout the stable. No one without the mallein test could safely say from the appearance of the horses which were affected and which were free, or could indicate in any way in which stall the infected would be found. There was only one safe rule, and that was to test all. In dealing with such a disease there should be no intermediate course. The work should be done thoroughly. One latent case left undetected may cause very serious future loss.

"To stop all the horses in a stud without unnecessarily interfering with the work, to value all to the satisfaction of the owner and with justice to the Authority, to detect every case so as to eradicate the disease, and to condemn no uninfected horse so that no full-value payment should be necessary, is no light undertaking, and to have succeeded in doing this in all the infected studs is a source of considerable satisfaction. The fairness of Birmingham horse owners and their veterinary surgeons, and the invaluable and untiring help of my colleague, materially contributed in securing this gratifying result.

"Until last year glanders had had a permanent foothold in Birmingham for many years, all efforts under the old Order to effect its eradiction and prevention having failed. This was partly due to failure to detect without mallein many latent cases in studs, the owners of which would not consent to a general test of their horses unless assured of generous compensation for reacters, and partly to the introduction of latent cases by the unwitting purchase of horses cast from infected studs in London and other centres of the disease. With respect to compensation, some years ago our Authorities were so anxious to free the City from the disease that, in the hope of eradicating it, they voluntarily gave horse owners compensation up

Glanders and farcy (*continued*).

to half the value of the horses condemned; but this revealed so many cases, many of which were in horses recently brought into the City from districts where no such compensation was being paid, that the Authority speedily ceased the voluntary contributions, and decided not to revert to compensation until the law made it obligatory in every district. With respect to the introduction of glanders by horses with latent disease, it is of some interest to record that the disease was first introduced into the two large studs which were responsible for more than half the cases certified here last year by the purchase of such horses. Subsequent to the introduction of motor omnibuses in London, several large consignments of cast horses from London studs were sent to Birmingham and sold by public auction, and we had unquestioned evidence of the disease having been conveyed into the surrounding country from infected studs in Birmingham and district. The introduction of the 1907 Order, with its provisions for generous compensation and mallein diagnosis, has largely reduced the risk of spreading the disease by cast horses, and the longer this Order is in force the less will be the risk of infection in this way.

"In applying the present Glanders Order we have had an excellent opportunity of observing the effect of mallein as a diagnostic agent. The more one sees of it the more is one convinced of its value. Of the 100 cases certified here last year 94 were diagnosed by mallein, and in every one of these the diagnosis was verified on post-mortem. In all, except one or two instances, the owners were represented by their veterinary surgeons at the post-mortem, but in not a single case did any veterinary surgeon deem it necessary to question the result. Evidence of glanders lesions, more or less extensive, were found in every case. In only one case did the reaction, or, in this instance, the non-reaction, appear to be at fault. This was an old, worn-out horse, which was suffering from chronic disease of the lungs, and which, notwithstanding the fact that it gave little local or thermal reaction to the mallein test, it was decided to have slaughtered. On post-mortem examination extensive old-standing glanders lesions in the lungs were revealed. It is difficult to explain satisfactorily the non-reaction in this case, but it may be remembered that parallel cases are occasionally met with in tuberculosis. A few horses showed doubtful reactions to the first test, but the majority of these gave a decisively positive or negative reaction at the second test. In the one or two exceptions a third test was deemed necessary, but after this all were declared free. Whether the indefinite reaction at the first and second test in these

exceptional cases was due to a slight incipient infection recovered from before the third test or to some other unexplained cause it is impossible to say. (Glanders and farcy—*(continued)*.

"The cost to the City of stamping out the disease, considering the number of animals found to be affected, has been comparatively slight, the total payments for compensation having been £644, or an average of £6 8s. 9d. for each horse condemned.

"The Board of Agriculture's returns of cases in Great Britain for the last four years are as follows:—

1905	...	2068	1907	...	1934
1906	...	2012	1908	...	2421

"There is not the least doubt that the increase in numbers in last year's returns for the whole country is simply due to the same cause as the increase in numbers in Birmingham—the better detection of latent cases. Wherever a sufficiently wide view of what is a suspected or an in-contact horse is taken, and nothing left to chance, speedy eradication of the disease will be effected. The sooner all Authorities realise this and act upon it the sooner will the disease be eradicated. Although the recent monthly returns by the Board of Agriculture do not show any such striking results as we have secured in Birmingham, there is no doubt that real progress in eradicating the disease is being made. Proof of this is confidently anticipated in future returns.

"*Anthrax.*—In 1908 no case of anthrax was detected in any animal in the City. In several instances the disease was suspected, but after a very careful and special examination, none of these were proved to be cases of anthrax. Last year's record of cases in Great Britain, according to the Board of Agriculture's returns, shows little variation from that of previous years. The figures for the last four years are as follows:— Anthrax.

1905	...	Animals attacked,	1317
1906	...	,, ,,	1326
1907	...	,, ,,	1466
1908	...	,, ,,	1426

"The origin of many of the cases could not be traced, but it is generally believed that many were due to the presence of anthrax spores in foreign feeding stuffs and manures. The difficulty of tracing the origin in these case is obvious when it is remembered that as a rule only one animal is attacked at each outbreak. Last year there were 1,108 outbreaks for the 1,426 animals attacked. The freedom of the City from anthrax is no doubt largely due to the educational

effects of the Board of Agriculture's circulars and of the prosecutions that have from time to time been instituted against farmers and others ignorantly dealing with anthrax carcases. It is now becoming the rule for farmers, when one of their animals die, to report the case to the Authorities for inspection, instead of, as formerly, forwarding the carcase to the slaughter-house in the hope of recovering something for its sale.

Rabies.

"*Rabies.*—It is a pleasure again to be able to report that no case of rabies occurred in this country last year. Several dogs in Birmingham were submitted for inspection as suspected of rabies, but in no instance did they show any symptoms really suspicious of the disease. So long as the present wise regulations governing the importation of dogs remain in force there are good grounds for anticipating continued freedom from rabies.

Swine fever.

"*Swine Fever.*—There is no evidence that swine fever is communicable to man, but there can be no doubt that the carcasses and offal of affected pigs is unfit for human food. The Board of Agriculture recognising this, has proscribed the sale of such as food.

"Swine fever in Birmingham is met with under two conditions, namely (*a*) in pigs brought into the City Markets, (*b*) among pigs kept and fed in the City. Several cases of the disease were detected in our Market, but as all the pigs in contact were immediately slaughtered, there is no record of the spread of the disease from these cases. They have, however, been instrumental in directing attention to the existence of the disease in the herds from which they came. With respect to the pigs kept in the City, many of these are purchased in the country and brought into the City to be fed. In several instances the disease has been introduced with young pigs purchased in this way for feeding purposes. The number of cases in the country generally shows a slight reduction as compared with that for the preceding year, but the disease is still so prevalent as to afford little hope of its eradication. The failure to eradicate the disease, or even to materially reduce it by the stringent measures now in force, is mainly due to the very infectious character of the disease, to the difficulty of diagnosis in the early and in the chronic stages, and to the frequent suppression of information respecting its existence. Not infrequently the first intimation the Board receives respecting the presence of the disease in a herd is obtained from the slaughter-house. If swine fever is ever to be eradicated, other measures than those now in force will have to be employed.

"*Swine Erysipelas and Contagious Pneumonia.*— Numerous cases of these unscheduled contagious diseases continue to be met with. The general practice of condemning the carcasses of badly-affected pigs and passing those with very slight evidence of disease seems fairly to meet requirements. Swine erysipelas. Contagious pneumonia.

"*Parasitic Mange.*—Parasitic mange has been scheduled in Birmingham and district under the Contagious Diseases Act by the Order of 1908. This Order came into force on the 9th day of April, 1908. From that date to the end of the year 58 cases were certified. The benefit to horse owners of this Order is unquestioned, and the risk of healthy horses becoming infected has been much lessened. In one or two instances the attendants showed slight but very transient evidence of the disease." Parasitic mange.

HOUSING OF THE WORKING CLASSES.

Notwithstanding the active propaganda which have been in operation in Birmingham during the past six years, there is still very much to be done in the direction of better housing conditions for a large number of the poorer classes. The present evil conditions are laid, very wrongly, at the door of those alone who own the houses, but this is so obviously unfair that it cannot be refuted too frequently. Poverty, bad economic conditions, drink, and carelessness and destructiveness on the part of the tenants will play their part in retaining the wretched houses which exist in Birmingham as in other towns. That a large proportion of the dwellers in the centre of the City still live in more or less damp, decayed, back-to-back houses, situated in courtyards, with an insufficient supply of air and sunlight, where the air is charged with soot, and the only look-out is on soot-besmeared brick walls, is a state of affairs which probably nobody will attempt to justify. Particularly are the children reared under such bad artificial conditions to be thought of, for the majority of them are unable of their own accord to get into the natural surroundings of mankind until they have reached adolescence. Housing of the working classes.

The majority of the people living under these circumstances are contented with their lot, and it is probably not until discontent is felt that real progress will be made. No work done as a result of any Act of Parliament will wholly remedy these conditions, but while this is so, perhaps as much is accomplished in Birmingham in this direction of dealing with the worst of the housing conditions as is being done elsewhere. In regard to the other segment of the vicious circle in which these people live, poverty, bad economic conditions, drink, and vice, the remedy must largely come from the people themselves.

Housing of the working classes —(*continued*).

The year 1908 has been one of great depression in small house property from a business point of view. While sympathising with those who are losing so heavily, it is possible at the same time to rejoice at the main cause of this depression, *i.e.*, the migration of the people from the central crowded areas to the new houses in the suburbs as a result of the recently-established excellent means of cheap transit. This migration outwards has left a large number of the back-to-back houses in courtyards tenantless. Unfortunately, the larger number of the people have to migrate to districts outside the City boundary, so that year by year Birmingham is losing a proportion of its most healthy-minded and robust inhabitants. It follows that those who are left contain the most unhealthy-minded and vicious group of the people—just those who are most destructive to property.

The time appears to be opportune for obtaining effective powers to deal with dirty and destructive tenants. At the present time the procedure is so cumbrous and ineffective that neither the owners of the houses nor the Local Authority care to put in operation existing powers unless in the most exceptional circumstances. Many houses, from carelessness and ignorance, are kept in a filthy condition—so filthy that the atmosphere in them smells strongly of the filth. Moreover, many of the tenants damage the property by burning the woodwork, destroying the plaster, and otherwise neglecting to take reasonable precautions. It is very much to be desired that owners should obtain, perhaps with the assistance of the Local Authorities, much more rapid and effective means of getting rid of such tenants than they possess at present, and with powers to recover the cost of repairing property which has been recklessly destroyed. Much sympathy may be given for those in poverty, but this should not be given to those who, in addition to their poverty, and therefore inability to pay rent, at the same time keep their premises in a filthy condition, and are often guilty of flagrant acts of destruction. Cases come to light every year of tenants who burn the doors and staircases for firewood, who use unoccupied rooms or cellars as conveniences, and who never mean to pay rent for more than a few weeks.

Town planning.

Before detailing the work of the year 1908 under the Housing of the Working Classes Acts, it is necessary to refer to the important event of the introduction of the Housing and Town Planning Bill, which, although not yet placed on the Statute Book, indicates the general principles along which housing reform is going. The Bill is full of new features, many of which will facilitate the work in Birmingham, and some of which will not affect such areas as a City.

Town planning —(*continued*).

Generally speaking, the three outstanding features as far as it affects Birmingham are:—

I.—The more effective powers given for dealing with bad house property.

II.—The establishment of a survey and register of small house property.

III.—Town planning.

As regards the latter feature, it must be admitted at once that the measure, although largely influenced by the report made some years ago by this City does not comply with the conditions which should govern an effective Town Planning Act. It must be recorded rather as a contribution to the better legislation which must follow before Town Planning can be really effective in developing suburbs on wholesome lines and in reconstructing those central areas which are badly laid out on the most convenient and most economical lines.

As instances of weakness in the Bill might be mentioned (*a*) the absence of the establishment of a proper Town Planning Authority, so constituted as to be representative of all the interests involved; (*b*) the centralization of all authority in town planning—a condition which will effectually stifle originality and progress, and lead eventually to the conditions in which the Local Poor Law Authorities now find themselves; (*c*) the want of any power to co-ordinate one area with another, and particularly with old existing areas. For this purpose it is essential that two sets of plans should be made, *i.e.*, general plans of large areas and detailed plans of small areas.

The general work of the Housing Committee in improving the existing housing conditions may be seen from the accompanying table.

Date.	Represented.		Rendered Habitable.		Demolished.		Closing Orders.		Demolition Notices.	
	Houses.	Properties.	Houses.	Properties.	Houses.	Properties.	Houses.	Properties.	Houses.	Properties.
1903 ...	304	85	155	32	34	19	65	19	51	15
1904 ...	1119	143	242	37	127	33	233	31	36	6
1905 ...	793	98	330	38	230	43	327	41	61	7
1906 ...	596	87	370	49	117	26	199	25	143	13
1907 ...	806	120	262	41	422	64	679	102	157	24
1908 ...	650	79	494	69	257	43	184	24	164	30
Total ...	4268	612	1853	266	1187	228	1687	242	612	95

Harborne Tenants Estate

In the last Annual Report will be found an account of the plan and method of leasing the Corporation land at Bordesley Green, where a well laid out estate is to be built. By the kindness of Mr. F. Martin, Architect, it is possible this year to give a representation of the general scheme of development of another large estate to be laid out on model lines, which was commenced during 1908 under the title of Harborne Tenants, Limited. The cottages are being erected on "co-partnership" lines, and when finished will be another object lesson as to what a pleasant, healthy neighbourhood should be for dwellers in small cottages.

Houses unfit for habitation.

As in former years, detailed lists are appended of the properties dealt with during the year:—

HOUSES REPRESENTED BY THE MEDICAL OFFICER OF HEALTH, 1908.

Property.	No. of Houses.
High Street, Deritend, 23 to 28 and 5 Court ...	22
Bartholomew Street, 53, 54, and 55 and 5 Court ...	8
Adderley Street, 30, 31, and 1 to 4 at rear... ...	6
Heath Mill Lane, 11 Court	8
Green Street, 8 and 9 and 1, 2, and 3 in 2 Court ...	5
Cooksey Road, rear 310	8
Steward Street, 23 Court	3
Benson Road, 107 and 109 and 1 to 14 at rear ...	16
Talfourd Street, No. 65 and rear	6
Talfourd Street, No. 67 and rear	6
Talfourd Street, No. 69 and rear	8
Woodcock Street, Nos. 1 and 2 and 1 Court ...	4
Cherrywood Road, rear 157	4
Lancaster Street, 28 Court	6
Charles Henry Street, 5 Court	10
Lower Darwin Street, 10 to 15 and rear	12
Emily Street, 5 Court	7
Darwin Street, 26 Court	3
Dymoke Street, 1 to 13, rear of 82	13
Ormond Street, No. 15 and 4 Court	3
Holt Street, 18 Court	3
Pritchett Street, 80 and 81 and 1 to 5 in 17 Court ...	7
Sloane Street, 16 to 24 and rear	29
Sloane Street, 43 to 50 and rear	20
Wharf Street, 24, 25 and rear	11
Don Street, 5 to 20 and rear	16
Darwin Street, 3 Court	10
Marshall Street, 26, 27 and 3 Court	9
Newtown Row, 1 to 3 in 36 Court	3
Henry Street, 6 Court	4
Alcester Street, 205, 206 and 19 Court	5
Green Street, 64 to 66 and 10 Court	6
Cheapside, 49, 50 and 51	3
Adams Street, No. 67	1
Coleman Street, 22 and rear	6
Vauxhall Road, 21 and rear	4
Windsor Street, 30 and 34 and rear	10
Garrison Lane, 458 to 466 and rear	24
Windsor Street, 179 to 181 and 9 Court	5
Darwin Street, 52 to 54 and 8 Court	6
Alcester Street, 100 to 109 and 196 Darwin Street ...	3
Gt. Francis Street, 18 Court...	4


HARBORNE TENANTS Ltd
Scale of 400 feet to an inch
MARTIN & MARTIN ARCHITECTS
108 COLMORE ROW
BIRMINGHAM
DECEMBER 1907
ALLOTMENTS & TENNIS COURTS
GREEN
ALLOTMENTS
PLAYING SPACE
PARK
PARK
POOL
PLAYING SPACE
GREEN
ALLOTMENTS
CROSSWOOD ROAD
CAUSEE ROAD
WENTWORTH ROAD
KENILWORTH GATE
LONSDALE ROAD
GRAVENHURST ROAD
PARADISE HILL ROAD
HARBORNE STATION
LANE

Houses unfit for habitation (*continued*).

Property.	No. of Houses.
Newtown Row, 35 Court	7
Lawley Street, 138 to 142 and 26 Court	16
Ward Street, 6 and 7 and 2 Court	11
Ward Street 12 to 16 and 5 Court	17
Brearley Street 57 to 59 and 21 Court	8
Gt. Colmore Street, 3 Court	19
Camp Hill, 167 to 170	4
Brearley Street, 41, 42 and 17 Court	8
Sheepcote Lane, 25 and rear	6
Grosvenor Street West, 26 to 36 and rear	21
Grosvenor Street West, 50 to 52 and 4 Court ...	6
Spring Hill 34 to 38 and rear	11
Steward Street, 10 and rear	5
Steward Street, 13 and rear	3
King Edwards Road, 262 and 264 and 5 Court ...	12
Icknield Street 214, 215 and rear	7
Sherborne Street, 12, 13 and 5 Court	10
Sherborne Street, 14 and 6 Court	6
Lawford Street, 13, 14 and 15 and rear	8
Lawford Street, 20, 21 and rear	4
Lawford Street, 24 and 4 at rear	2
Lawford Street, 1 to 6 in 5 Court	6
Inkerman Street, 134	1
Tower Street, 112 to 115 and 30 Court	11
Tower Street, 120, 121 and 32 Court	9
Anthony Road, 10 to 26	9
Ormond Street, 39, 40 and 10 Court	6
Lower Tower Street, 10 Court	13
Brearley Street, 7 Court	6
Summer Lane, rear 291	3
Summer Lane, 53 Court	2
Howard Street, rear 50	3
Hospital Street, 147 to 153 and 23 Court	5
Hospital Street, 26 Court	12
Princip Street, 57 to 60 and 5 Court	16
Ward Street, 6 Court	1
New Summer Street, 24 Court	9
Total	650

HOUSES RENDERED HABITABLE, 1908.

Houses rendered habitable.

Property.	No. of Houses.
Warwick Street, Chapel Terrace	12
Rea Street, 13 to 17	5
Humpage Road, 13 to 17 and rear	10
Aston Road, rear 80	10
Richard Street, 72 to 75 and rear	6
Dartmouth Street, 11 Court	8
Price Street, 25 and 26	2
Coleshill Street, rear 68	5
Devonshire Street, 86 to 96	6
Bordesley Street, 17 Court	9
Floodgate Street, 12, 13, and houses at rear ...	7
Runcorn Road, Elm Avenue	3
Glover Street, 6 Court	7
Glover Street, 7 Court	7
Coleman Street, 5 and 6 Courts	14
Newhall Street, 9 Court	4
Berkley Street, 2, etc.	7
Sherborne Street, 20, etc.	5
St. Martin's Street, 2 Court	4

Houses rendered habitable—*(continued*

Property.	No. of Houses.
Benson Road, 35, 37 and rear	4
New Canal Street, 31, 32, and 54, etc., Fazeley St. ...	6
Hatchett Street, 17 Court	8
Willis Street, 10 Court	9
Ivy Lane, 23, etc.	4
Bishopsgate Street, 20 Court	20
St. Margaret's Road, 109, etc.	5
William Street, 2, 3, 4, and 5 Courts	21
Tennant Street, 1 to 14 and rear	6
Coleman Street, 1 Court	4
Humpage Road, 37 to 44 and rear	22
Allison Street, 2 and 3 Courts	15
New John Street, 83 and 84	2
Adams Street, No. 65	1
High Street, Deritend, 1 Court	4
Barford Street, 86 to 100	9
Heath Mill Lane, 12 Court	7
Adelaide Street, 10 Court	7
Aston Road, 14 Court	5
Price Street, 6 and 7 Courts	14
Ormond Street, 22 and rear	3
Hatchett Street, 86 to 90	5
Cherrywood Road, 157 and rear	4
Ryland Road, 6 Court	4
Cheapside, 7 Court	9
Fox Street, rear 13	3
Adams Street, No. 67	1
High Street, Bordesley, 15 Court	5
Bordesley Street, 25	1
Coleman Street, 12, 13 and rear	14
Lawley Street, 30 Court	11
Bartholomew Street, 6 Court	4
Essington Street, 5 Court	11
Brewery Street, 24 to 29	6
Steward Street, 49, 50, and 51	3
Steward Street, 22 and 23 Courts	6
Hospital Street, 99, 101 and rear	4
Holt Street, 97 and 98	2
Barn Street, 10 Court	7
Bordesley Street, 74, 96 and 16 Court	11
Lower Trinity Street, 23, 24 and rear	4
Don Street, 30 to 46	9
New John Street, rear 164	3
Camp Hill, rear 5	3
Sherborne Street, 7 Court	14
Vauxhall Road, 11 Court	9
Wharf Street, 276 to 290	9
Park Road, 1 to 7	7
Barford Street, 62 and 64	2
Lawley Street, 26 Court	16
Total	494

HOUSES DEMOLISHED 1908.

Houses demolished.

Property.	No. of Houses.
Fazeley Street, 127 and 139	2
Woodcock Street, 2 Court	4
Lupin Street, rear 20	4
Coleshill Street, rear 68	1
Blews Street, 20 and 22	2

Houses demolished—(*continued*).

Property.	No. of Houses
Price Street, 8 Court	4
Sherborne Street, rear 20	3
Pershore Street, 1 Court	3
Bromsgrove Street, 3 Court	3
Arter Street, 9, 11 and 13	3
Sherborne Street, rear 63	3
Bordesley Street, 16 Court	3
Clyde Street, 18, etc.	5
Little Edward Street, 1 to 4	4
Garrison Lane, 1 and 2 Courts	14
Holt Street, rear 97	3
Essington Street, 2 Court	3
Duke Street, 4 Court	12
Moland Street, 1 Court	10
Hospital Street, 21 Court	17
Lower Loveday Street, Stanton's Buildings ...	7
Navigation Street, 15 Court	5
Tower Street, rear 116	4
Morville Street, rear 91	2
Derby Street, 4 and 5	2
Berkeley Street, rear 2	5
Lancaster Street, 27 Court	3
Lower Dartmouth Street, 36 to 47	15
St. Martin's Street, 2 Court	2
Fisher Street, 4 Court	6
Tennant Street, 104, 105 and rear	4
Summer Lane, 369 and 374 and rear	13
Cheapside, 315 to 323 and rear	21
Rea Street, 30 to 42 and rear	28
Key Hill Passage, 30 to 33	4
Bristol Street, 127, 129, and 131	3
Holt Street, 17 Court	5
Moland Street, 22 Court	1
Hatchett Street, rear 16	2
Bishopsgate Street, 20 Court	3
Lancaster Street, 23 Court	6
Tower Street, 10 Court	8
Newtown Street, rear 7	5
Total	257

CLOSING ORDERS OBTAINED, 1908.

Closing orders obtained.

Property.	No. of Houses.
Sherborne Street, 7 Court	14
Darwin Street, 12 and 13 Courts	31
Brearley Street, 8 Court	4
Chester Street, No. 10	1
Coleman Street, rear 38	4
Tennant Street, 111, 112 and rear	4
Hick Square and Nova Scotia Street, ...	2
Cliveland Street, 36 to 42 and rear	12
Inge Street, 9 Court	7
Woodcock Street, 7 Court	1
Cromwell Street, 57 Court	9
Adams Street, No. 65	1
Tower Street, 27 Court	6
Steward Street, 14 Court	2
Brewery Street, 24 to 29	6
Steward Street, 5 to 9, etc.	6
Hospital Street, 17 Court	7

Closing orders obtained— (*continued*).

Property.	No. of Houses.
Brearley Street, 11 Court	5
Northumberland Street, rear 46 to 49	13
Windsor Street, 9 Court	5
Lawley Street, 51, 53, etc.	8
Garrison Lane, 458 to 462, and rear	24
Marshall Street, 3 Court	9
Newtown Row, 36 Court	3
Total	184

DEMOLITION ORDERS SERVED, 1908.

Demolition orders served.

Property.	No. of Houses.
Mill Street, 39 to 71	17
Gt. Hampton Row, 3 to 8 in 1 Court	6
New John Street, 11 Court	3
Lawford Street, 32 to 41 and rear	24
St. James Place, 12 to 17 and rear	12
Essington Street, 1 and 2 Courts	5
Vauxhall Road, 1 to 10 in 7 Court	10
Moseley Street, 25 Court	2
Coleshill Street, rear 94	4
St. George's Street, rear 15	5
Heneage Street, 8 Court	6
Hampton Street, 22 Court	2
Fisher Street, 4 Court	9
Fox Court, Buck Street	2
Hospital Street, 68 to 70, etc.	4
Aston Street, rear 18	1
Park Lane, 8 to 11 and rear	7
Newton Street, 7 and rear	5
Key Hill, Key Hill Passage	4
Devon Street, 1 and 2 Courts	6
Regent Row, 19 and 20	2
Curzon Street, 7 and 8 Courts	6
Gt. Hampton Row, 9 to 12 in 1 Court	4
Shadwell Street, 6 Court	3
Hick Square, No. 1	1
Nova Scotia Street, No. 14	1
St. Martin's Street, 3 Court	3
Tennant Street, 3 Court	2
Chester Street, No. 10	1
Inge Street, 9 Court	7
Total	164

COMMON LODGING HOUSES.

Common lodging houses.

The common lodging house accommodation in Birmingham was increased during the year 1908 from 2,216 beds to 2,502 beds. This does not include the accommodation of over 800 beds provided at Rowton House. The increase of 286 beds compares with an increase of 216 in the previous year. Of the 2,502 beds 96 were for women only.

Common lodging houses —(*continued*)

Seven new common lodging houses were registered during the year. Before registration each was required to be structurally in sound condition, to have the sleeping-rooms effectively ventilated, to have sufficient water-closet accommodation, and also suitable accommodation for ablution. Proper means of escape from the upper rooms in case of fire had also to be provided.

Speaking generally, it may be said that the common lodging houses are in a fairly satisfactory condition, all of the older ones having been overhauled some years ago.

One inspector devotes the whole of his time to the inspection of these lodging houses, with a view to seeing that the byelaws are carried out during the daytime as regards cleanliness of the house, and during the night with reference to overcrowding, &c.

The following statement shows the routine work done during the past three years in regard to common lodging houses:—

	1906.	1907.	1908.
Visits paid by day	4,545	4,395	4,083
Visits paid by night	587	677	510
Windows not thrown open	6	8	6
Floors requiring cleansing	34	35	8
Bed clothes requiring cleansing	55	618	209
Bed clothes to be provided	115	612	443
Houses limewashed	83	84	100
Means of ventilation provided	16	19	137
Repairs to walls, floors, roofs, and windows	54	93	235
Wash-basins provided	3	27	34
Sinks provided or repaired	4	5	12
Water closets provided	2	19	27
Water closets repaired	29	46	59
Ash tubs provided	9	6	14
Drains repaired	5	17	24
Yards paved	1	0	0
Fire Buckets provided	6	33	59
Fire Escapes provided	1	4	5

HOUSES SUB-LET IN LODGINGS.

Houses let in lodgings.

The houses which come within the requirements of the regulations in reference to houses let in lodgings are probably the most unsatisfactory in the City. They are tenanted by very poor people, many of whom are extremely careless and improvident, and also destructive. A landlord, therefore, who decides to allow his house to be occupied by this class of tenant must provide for the dilapidation which always happens.

There were 511 such houses on the register, as compared with 430 in 1907, and 360 in 1906. These houses were registered as having accommodation for 2,788 persons, as against 2,381 in the previous year. During the year 3,706 visits were paid during the daytime, as compared with 3,220 in the previous year. Except in special cases no visits are paid at night, as the regulations do not admit of such inspection, and, indeed, it is undesirable that such visits should be made in the majority of instances.

CANAL BOATS.

Canal boats.

The following is a copy of the report required by the Local Government Board with reference to canal boats during the year 1908:—

"REPORT OF INSPECTOR OF CANAL BOATS, 1908.

"Health Department,
"Council House, Birmingham,
"14th January, 1909.

"To the Chairman and Members of
the Health Committee.

"Gentlemen,

"In compliance with Section 3 of the Canal Boats Act, 1884, I present to you the Annual Report of the work accomplished under the Canal Boats Acts, 1877 and 1884, and the Regulations of the Local Government Board made thereunder, for the year ending 31st December, 1908.

"Inspector William Lee Wilson, whose office is in the Council House, acts as Inspector under the above Acts. His duties are combined with certain duties connected with the attendance at school of canal boat children. He devotes all his time to the duties of the joint office, the remuneration for which is £109 4s. 0d. (one hundred and nine pounds four shillings) per annum, with uniform.

"1,080 boats, registered to carry 3,554½ adults, were inspected during the year. The following table gives the corresponding numbers since 1904:—

Year.	No. of Boats Inspected.	No. of Adults Boats are registered to carry.
1904	1182	4022
1905	925	2979
1906	1059	3507½
1907	1047	3348
1908	1080	3554½

"The actual numbers carried in the boats inspected during 1908 were:—1,660 men, 641

women, and 610 children, a total of 2,911 persons—equal to 2,606 adults.

"1,025 boats out of the total number inspected, or 94·9 per cent., were found to be in compliance with the Acts and Regulations. But in regard to 55 boats contraventions existed, and notices were duly served on the owners: 49 of these notices referred to one contravention only, and 6 to two. The total number of infringements found was therefore 61, and these may be classified as under:—

Infringement of the Acts and Regulations with respect to	Brought forward from 1907 to be dealt with.	No. found during 1908.	Notices complied with during 1908.	Carried forward to be dealt with in 1909.
Registration	2	10	12	—
Notification of change of master	—	—	—	—
Certificates	2	14	14	2
Marking	2	17	17	2
Overcrowding	1	7	8	—
Separation of the sexes	—	2	2	—
Cleanliness	—	—	—	—
Ventilation	—	—	—	—
Painting	—	3	3	—
Provision of Water Cask	—	8	8	—
Removal of Bilge Water	—	—	—	—
Notification of Infectious Disease ...	—	—	—	—
Admittance of Inspector	—	—	—	—
	7	61	64	4

"It was again found unnecessary to take any legal proceedings. The custom of sending letters to owners drawing attention to the requirements of the notices unfulfilled, which has been carried on in former years, has been continued with very satisfactory results. In the large majority of cases compliance was readily made.

"No case of infectious disease occurred during the year.

"The number of boats on the register on 31st December, 1908, was 396, compared with 391 at end of 1907, 394 at end of 1906, 383 at end of 1905, and 379 at end of 1904. Fifteen boats were registered during the year, and the certificates of ten boats were cancelled. No fresh registration on account of structural alterations was rendered necessary during the year.

"Your obedient servant,

"GEORGE F. BUCHAN,

"Assistant Medical Officer of Health."

MILK SUPPLY.

Milk supply.

Mr. Malcolm, the Veterinary Superintendent, is charged by the Health Committee with the supervision of cows and cowsheds, and certain other duties in connection with the provision of a pure milk supply to the City. His report on the work during the past year is as follows :—

"*The Milk Supply.*—The effort to secure a milk supply as pure as possible has been continuous, and has been extended in a new direction. The systematic inspection of cows and cowsheds in the City has been maintained. The procedure inaugurated in 1906 of taking samples of mixed milk from churns at the Railway Stations and other places for bacteriological examination, and of subsequently visiting and inspecting the cows on farms outside the City whose milk supply was found to contain living tubercle bacilli has been continued. A commencement has now been made in an endeavour to eradicate tuberculosis from a number of the herds supplying milk to Birmingham, so as to provide a supply of tubercle-free milk from non-tubercular cows for hospitals and other public or private institutions, and ultimately for anyone in the City who is desirous of obtaining such milk for infants and others, and who is willing to pay a reasonable price for it.

Freeing herds from tuberculosis.

"*Freeing Herds from Tuberculosis.*—On twelve farms an attempt has been commenced to eliminate tuberculosis from the dairy stock, and it has already met with encouraging success. In this work the tuberculin test has been relied upon for diagnosis. By it one is able in all ordinary cases to distinguish the infected from the free. Four of these farms have already been freed from tuberculosis, and their continued freedom has been verified by a second test. On these farms at the first test the percentage of infected cows was very low, and, taking all the circumstances into consideration, the owners deemed it a wiser course to at once dispose of the infected cows than to retain them and attempt to maintain effective segregation between the infected and free portions of the herds. In connection with one of the herds it is of some interest to record that this—a small herd of thirteen cows—consisted of twelve home-reared cows and one recently-purchased cow, and the latter was the only one affected. One need scarcely say that in this case the infected cow was immediately disposed of. Many herds formerly free have been infected by purchased diseased stock, as would have been the case here but for the opportune detection of the infected cow. On seven of the farms where the percentage of the reacters was higher, it

has been decided to adopt isolation measures, with the intention later on of gradually eliminating the infected stock, as circumstances permit. The ultimate success of this procedure will largely depend upon the thoroughness with which the segregation of the infected from the free is maintained. On one of the farms, on which there was a large herd of good-looking cows in good condition, 83·7 per cent. of the cows reacted to the test. In this case the farmer has declined to proceed any further in the matter at present. Freeing herds—(*continued*).

"Those rural dairy farmers who breed and rear their cows could far more easily maintain a tubercle-free herd, once the disease has been eradicated, than urban cowkeepers, who have to renew their stock solely by purchase. The majority of urban cow-keepers would speedily possess tubercle-free herds if they could with any certainty obtain an adequate supply of tubercle-free cows. At present this is impossible, and anyone purchasing certified tubercle-free cows has to pay a considerably enhanced price. It is to be hoped that the prospect of a higher price for such cows may stimulate those farmers who rear cows to take the necessary steps to meet the demand. Unfortunately, the occurrence of contagious abortion in two herds, where the farmers have for years purchased all their cows, but recently decided to commence rearing them, has upset matters, and for the time being deferred their taking any action in this direction.

"*Tubercle Infection in the Milk.*—Fifty-three samples of mixed milk were taken from churns and submitted to Professor Leith for bacteriological examination. Of these, six were found to contain living tubercle bacilli At the subsequent examination of cows at the farms, 32 samples of milk were taken direct from the cows, and four of them revealed tubercle bacilli in the milk. The cows yielding the infected milk were at once removed from the dairy stock and their milk prohibited from being sold. These cows were subsequently killed. In the other two cases of infected mixed milk the source of the tubercle infection could not be traced. Besides these samples of milk from rural dairies, fifteen samples were taken from individual cows in the City. Of these one was found infected; the cow was removed from the dairy and killed. Tuberculous milk.

"There are several possible explanations of the occasional failure to trace the source of tubercle infection in mixed milk. The cow giving the infected milk may have ceased milking, or may have been sold

in the interval between the taking of the mixed sample and the inspection of the herd, or the tubercle infection may not have been due to the udder, but have been otherwise introduced into the milk. The repeated failure to find the source of infection, and the fact that a mixed sample of the milk of the whole of the incriminated herd has been found free from infection, point to some such explanation as suggested.

Inspection of cows and cowsheds.

"*Systematic Inspection of Cows and Cowsheds in the City.*—This has been continued as heretofore, each shed, as a rule, being inspected once a month: altogether 651 visits were made. At each visit the cows were systematically examined as to the condition of their udders and their milk. As a result of this inspection, the milk of fourteen cows was temporarily discontinued from sale on account of mastitis. These cases, as is usual in bovine mastitis, varied considerably in intensity, and the milk varied with the degree and character of the inflammatory process.

"A number of cases of diphtheria occurred among the customers of one of the cowkeepers. In connection with this the cows were twice specially examined for evidence of any specific disease of the udder. Except for slight chapped teats in one or two cases, of no importance, the cows' udders and teats were found to be quite healthy, and there was no evidence of any causal connection between the cows and this outbreak of human diphtheria.

"Generally speaking, the cowsheds were found in a fairly clean and sanitary condition. In several instances, however, the cleansing was not altogether satisfactory; in these cases notices were served, with the warning that unless greater cleanliness was maintained legal proceedings would be taken.

"On December 31st, 1908, there were 22 cowkeepers in the City, with 66 cowsheds, registered to contain 598 cows. In the preceding year the respective numbers were 25, 69, and 616. During the year two cowkeepers and four sheds, with standings for 36 cows, were added to the register, and five cowkeepers and seven sheds, with standings for 54 cows, were removed from the list."

Milkshops and dairies.

In addition to Mr. Malcolm's work, one inspector devotes the whole of his time to the inspection of dairies and milkshops. As will be seen from the following table, there are over 3,000 persons who vend milk in the City from shops or carts. A number of these vendors are unsatisfactory persons, who hawk milk under dirty condi-

tions, the milk itself sometimes being of somewhat doubtful quality. Such men often purchase perfectly satisfactory milk, while at other times they obtain old milk, which could not be sold by a respectable dealer, and sell it. Milkshops and dairies—(*continued*).

A considerable amount of attention has been paid to the condition of the churns in which milk is sent into Birmingham, and to an increasing degree they are now of better pattern than formerly, and relatively few come into the City with defective lids.

The work done by the inspector during the past three years is indicated in the table below:—

	1906	1907	1908
Dairies on the register	14	13	12
Milkshops on the register	2379	2461	2582
Purveyors on the register	354	425	506
Dairies registered during the year ...	0	0	0
Milkshops registered	609	588	612
Purveyors registered	122	71	88
Dairy certificates cancelled	1	1	1
Milkshops ,, ,, ...	557	506	491
Purveyors ,, ,, ...	18	0	7
Visits to dairies	66	44	32
Visits to milk shops and milk stores ...	4487	4137	3443
Dirty vessels found at milk shops and milk stores	30	29	22
Shops, cellars, and pantries whitewashed	122	150	77
Lamp oil, fish, tripe and vinegar businesses prohibited	39	15	5
Dirty churns found at railway stations ...	0	2	1
Cases of infectious disease reported at milkshops	49	42	31

INSPECTION OF MEAT, FISH, AND FRUIT.

Slaughterhouses

The inspection of slaughter-houses is entirely under the supervision of the officers of the Markets and Fairs Committee, and during the year under review the staff in connection with this work has been increased so as to enable much better inspection of slaughter-houses to be carried out than formerly. There are yet in Birmingham a very large number of private slaughter-houses, many of which were inspected at irregular intervals. There were 10,850 visits paid during the year to slaughter-houses, as compared with 9,460 in 1907. A number of butchers still use their slaughter-houses during the night time, particularly in hot weather.

Meat, fish and fruit.

In the following return, supplied by the Superintendent of the Markets, is set out the amount of bad meat, fish, and fruit dealt with during the year. It will be seen that 31 seizures of unsound meat and fish were made during the year, as against 27 in 1907, 123 in 1906, and 21 in 1905. Five prosecutions were instituted in the City

Meat, fish and fruit—(*continued*).

on account of exposure for sale of bad food, as compared with five in the previous year, seven in 1906, and five in 1905. The vast majority of bad food is surrendered by dealers, and is destroyed at Montague Street Wharf.

	1906	1907	1908
BAD MEAT.			
Voluntarily surrendered ...	2947 lots.	3109 lots.	3659 lots.
Seized by inspectors	30 lots.	18 lots.	19 lots.
Weight destroyed	376 tons.	290 tons.	303 tons.
Persons prosecuted	4	3	5
Penalties inflicted	£36	£8	£14
BAD FISH.			
Voluntarily surrendered ...	1228 lots.	1387 lots.	1519 lots.
Seized	93 lots.	9 lots.	12 lots.
Weight destroyed	95 tons.	89 tons	141 tons.
Persons prosecuted	3	2	0
Penalties inflicted	£1 10s. 0d.	£5	£0
BAD FRUIT.			
Weight destroyed	20 tons.	15 tons.	24 tons.

FACTORIES AND WORKSHOPS.

Factories and workshops

In the following tables, which are drawn up for the information of the Factories Department of the Home Office, are set out the main statistics in relation to the work done by the inspectors employed by the City Council under the Factory and Workshop Act. The Inspectors of the Home Office undertake practically the whole work of inspection in the case of factories, except that with reference to sanitary conveniences, as well as a large part of the work in connection with workshops, so that there are two sets of officers visiting the factories and workshops in the City.

Generally speaking, when the workshops in Birmingham are compared with those in other countries the comparison is distinctly unfavourable. The idea that a workshop in which a man is employed for a long number of hours daily should be kept approximately as clean as the house in which he lives is not entertained, and as a consequence many of the workshops are somewhat dirty, and as many of them are old and ill-adapted to modern sanitary requirements, it is not to be wondered at that these workshops have a profound influence on the health of the workers. This influence is difficult to demonstrate statistically, although such figures as those relating to phthisis do indicate very strongly the effect which bad workshop conditions have upon the workers.

Besides the workshop conditions, there are so many other influences at work that it is impossible to separate the conditions in the workshops from those outside, but anybody who is accustomed to see some of our workshops

empty themselves of their workers cannot but be impressed by the poor physique and unhealthy appearance of many of those engaged. With a knowledge that many of the workshops are badly ventilated, badly lighted, and insufficiently cleansed, there can be little difficulty in coming to the conclusion that defective conditions of work do play a certain part in the production of ill-health in the City.

FACTORIES AND WORKSHOPS—RETURN FOR 1908.

I.—INSPECTION.

PREMISES.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories	926	34	1
Workshops	8690	407	1
Workplaces	771	17	1
Total	10387	458	3
Revisits paid ...	4495	—	—

II.—DEFECTS FOUND.

PARTICULARS.	Number of Defects			No. of Prosecutions.
	Found.	Remedied.	Referred to H.M.I.	
Nuisances under the Public Health Acts :—				
Want of cleanliness	2165	2158	—	2
Want of ventilation	58	58	—	—
Overcrowding	2	2	—	—
Want of drainage of floors ...	11	11	—	—
Other nuisances	1314	1309	—	1
Sanitary accommodation — Insufficient	88	88	—	—
Sanitary accommodation — Unsuitable or defective	1839	1824	—	—
Sanitary accommodation — Not separate for sexes	81	81	—	—
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse	0	0	—	—
Breach of sanitary requirements for bakehouses	1	1	—	—
Other offences	0	0	—	—
Total	5559	5532	—	3

III.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.										Inspection of Outworkers' Premises.	Outwork in unwholesome Premises, Section 108.	Outwork in Infected Premises. Sections 109, 110.
	Lists received from Employers.						Addresses of Outworkers.		Prosecutions.				
	Twice in the year.			Once in the year.									
	Lists.	Outworkers.		Lists.	Outworkers.		Received from other Councils.	Forwarded to other Councils.	Failing to keep or permit inspection of lists.	Failing to send lists.		Notices served.	Instances.
		Contractors.	Workmen.		Contractors.	Workmen.							
Wearing Apparel—													
(1) Making, etc.	242	612	1067	67	138	196	96	195	...	1	...	...	...
(2) Cleaning and Washing ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lace, Lace Curtains, and Nets ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furniture and Upholstery ...	2	...	2	1	...	1	...	...	...	...	...	...	...
Carding, etc., of Buttons, etc. ...	22	24	1849	10	...	99	155	264	...	...	...	...	...
Paper Bags and Boxes ...	14	...	126	7	...	29	...	16	...	...	...	6	...
Basket Making	...	...	...	..	...	...	...	...	...	...	...	1	...
Brush Making	10	...	201	...	...	...	...	50	...	...	...	...	...
File Making	...	...	...	...	...	...	...	...	...	...	...	...	...
Electro-plate	8	42	24	5	16	24	1	6	...	...	...	...	...
Cables and Chains	...	...	...	...	...	...	...	...	...	...	...	...	...
Anchors and Grapnels	...	...	...	...	...	...	...	...	...	...	...	...	...
Cart Gear	...	...	...	...	...	...	...	...	...	...	...	...	...
Locks, Latches and Keys ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	298	678	3269	90	154	349	252	531	...	1	1839	...	...

IV.—REGISTERED WORKSHOPS.

	Number.
Workshops on the Register (s. 131) at the end of the year	6232

V.—OTHER MATTERS.

		Number.
Matters notified to H.M. Inspector of Factories—		
Failure to affix Abstract of the Factory and Workshop Act		21
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act	Notified by H.M. Inspector	150
	Reports (of action taken) sent to H.M.I.	177
Other		—
Underground Bakehouses—		
Certificates granted during the year		—
In use at the end of the year		13

BLACK SMOKE.

Smoke nuisances.

The observations in the two following tables set out in statistical form show the work done in connection with the prevention of the black smoke nuisance. Four inspectors devote the whole of their time to the watching of works' chimneys. Each observation is made for one hour, and in order that confusion shall not arise, the observation is confined to one chimney. Undoubtedly there is an amount of black smoke emitted from certain chimneys in Birmingham quite out of proportion to the need for such.

The two main faults are (1) that manufacturers do not provide sufficient accommodation in the way of boilers, and (2) that they do not rely on their stokers to limit the amount of black smoke. Given an adequate amount of boiler accommodation properly arranged, it is found in

Smoke nuisances—(*continued*).

practice that there is little or no difficulty in preventing black smoke. There are now many thousands of works in this country where the merest puff of black smoke is all that is observable at the time of stoking. No report on black smoke in Birmingham would be complete without mentioning the conditions which arise in metallurgical furnaces, in many of which the prevention of black smoke is a matter of much greater difficulty than in the case of steam boilers.

The cases dealt with in Birmingham during each year since 1898 have been as follows:—

	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
No. of observations ...	6431	14100	9358	15808	13445	16705	13186	10034	8229	7934	7125
Average number of minutes of black smoke per observation ...	3·42	1·36	1·95	1·34	1·26	1·27	1·39	1·95	2·27	2·29	2·47

The next table shows the number of cases dealt with by the Health Committee during each of the last ten years:

	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Total Cases dealt with..	152	117	125	116	139	151	231	250	251	275	—
Cautionary letters sent.	99	81	89	80	89	71	117	128	116	119	108
Police Court proceedings	53	35	35	35	50	80	98	109	115	116	111
Total amount of fines ..	£40/2/0	£19/10/0	£24/10/0	£15/2/6	£33/15/0	£49/7/6	£77/10/0	£69/10/0	£82/15/0	£89/0/0	£66/12/6
Total amount of costs	£21/10/0	£14/0/0	£14/6/0	£14/4/0	£19/8/6	£36/15/6	£37/17/6	£41/0/0	£41/19/6	£41/0/8	£38/12/6
Average fine	15/1	11/2	14/0	8/7	13/6	13/2	15/10	16/2	17/1	18/11	14/6

APPENDIX.

TABLE I.—VITAL STATISTICS OF WHOLE DISTRICT DURING 1908 AND PREVIOUS YEARS.

Year.	Population estimated to middle of each year.	Births.		Deaths Under 1 year of Age.		Total Deaths Registered at all Ages.		Total Deaths in Public Institutions in the District.	Deaths of Non-residents registered in the District.	Deaths of Residents registered beyond the District.	Nett Deaths at all Ages belonging to the District.	
		Number.	Rate.*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*				Number.	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1898	510,343	17,289	34·0	3,287	190	9,936	19·5	1,518	...	...	...	...
1899	514,956	17,609	34·3	3,398	193	10,446	20·3	1,614	247	325	10,524	20·5
1900	519,610	16,941	32·7	3,366	199	10,756	20·8	1,911	267	393	10,882	21·0
1901	523,284	16,735	32·1	3,150	188	10,357	19·8	1,802	302	347	10,402	19·9
1902	528,181	†17,103	31·9	†2,681	157	†9,577	17·8	†2,082	†312	†407	†9,672	18·0
1903	533,039	16,866	31·7	2,668	158	9,056	17·0	1,916	321	388	9,123	17·2
1904	537,965	16,902	31·5	3,302	195	10,235	19·1	2,008	332	437	10,340	19·3
1905	542,959	15,795	29·2	2,451	155	8,588	15·9	1,838	362	492	8,718	16·1
1906	548,022	16,016	29·3	2,686	168	9,067	16·6	1,923	380	485	9,172	16·8
1907	553,155	15,619	28·3	2,300	147	8,744	15·8	2,054	397	532	8,879	16·1
Averages for years 1898–1907	531,151	16,687	31·5	2,929	175	9,676	18·3	1,867	...	...	...	...
1908	558,357	†16,141	28·4	†2,339	145	†8,855	15·6	†2,205	†401	†538	†8,992	15·9

* Rates in columns 4, 8, and 13 calculated per 1,000 of estimated population. † 53 weeks.

Area of District in acres, 12,639.

Total population at all ages at Census of 1901 522,204.
Number of inhabited houses ,, ,, 107,831.
Average number of persons per house at Census of 1901, 4·8.

TABLE II.—VITAL STATISTICS OF SEPARATE LOCALITIES IN 1908 AND PREVIOUS YEARS.

Year.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000.	Population estimated to the middle of each year.	Deaths at all ages.	Death-rate per 1,000
Wards	Rotton Park.			All Saints'.			Ladywood.			St. Paul's.			St. George's.			St. Stephen's.		
1899	41,673	758	18·2	40,009	705	17·6	25,140	496	19·8	17,118	376	22·0	20,641	490	23·8	23,533	624	26·6
1900	43,339	773	17·8	42,251	828	19·6	25,177	484	19·2	17,025	346	20·4	20,473	539	26·3	23,385	615	26·3
1901	46,835	752	16·1	41,444	725	17·5	25,089	502	20·0	14,954	338	22·6	20,230	469	23·2	23,765	633	26·6
1902	46,088	677	14·4	41,834	659	15·5	25,128	444	17·3	15,552	289	18·2	20,434	449	21·6	23,720	640	26·5
1903	46,887	650	13·9	42,101	662	15·7	25,253	448	17·8	15,561	299	19·2	20,412	425	20·8	23,768	499	21·0
1904	47,658	821	17·2	43,033	769	17·9	25,284	509	20·1	15,669	336	21·5	20,425	439	21·5	23,615	582	24·7
1905	48,530	680	14·0	42,232	618	14·6	24,842	413	16·6	15,543	244	15·7	20,350	383	18·8	23,284	465	20·0
1906	49,393	668	13·5	42,513	726	17·1	24,704	419	17·0	15,088	280	18·6	20,451	405	19·8	23,035	540	23·4
1907	50,788	676	13·3	43,959	618	14·1	24,815	390	15·7	14,483	247	17·1	20,080	388	19·3	23,275	494	21·2
1908	50,618	645	12·7	43,575	681	15·6	24,802	394	15·9	14,112	252	17·9	19,452	430	22·1	22,432	517	23·1
Wards	St. Mary's.			St. Bartholomew's.			Market Hall.			St. Thomas'.			St. Martin's.			Edgb. & Harborne.		
1899	15,536	476	30·7	26,947	732	27·2	11,030	207	18·8	18,682	428	22·9	23,941	503	21·0	30,313	418	13·8
1900	15,570	475	30·4	27,003	749	27·7	10,858	234	21·5	19,057	399	20·9	24,143	527	21·9	30,718	441	14·4
1901	15,904	472	29·7	26,857	696	25·9	9,807	171	17·4	19,215	402	20·9	23,950	485	20·3	30,795	402	13·1
1902	15,993	405	24·8	26,876	678	24·6	9,570	165	16·9	18,586	381	20·1	24,097	499	20·3	31,200	390	12·3
1903	16,248	375	23·1	26,572	647	24·4	9,483	154	16·3	18,559	347	18·7	24,019	404	16·8	31,311	380	12·1
1904	15,859	382	24·1	25,801	741	28·7	9,163	162	17·7	18,764	338	18·0	24,469	461	18·8	31,287	399	12·7
1905	15,551	325	20·9	24,762	571	23·1	9,049	154	17·0	18,563	315	17·0	24,662	395	16·0	31,002	345	11·1
1906	13,891	316	22·8	24,666	570	23·1	9,451	152	16·1	18,088	376	20·8	23,928	422	17·6	32,781	382	11·7
1907	13,386	287	21·4	23,043	543	23·6	8,930	153	17·1	17,361	317	18·3	24,116	396	16·4	33,215	394	11·9
1908	11,929	309	25·9	22,759	542	23·8	8,815	141	16·0	17,439	310	17·8	23,450	375	16·0	32,893	362	11·0
Wards	Deritend.			Bordesley.			Duddeston.			Nechells.			Balsall Heath.			Saltley.		
1899	25,346	618	24·4	52,206	807	15·5	24,038	512	21·3	33,773	761	22·5	38,120	666	17·5	36,717	672	18·3
1900	24,771	645	26·0	53,770	851	15·8	24,274	569	23·4	33,701	739	21·9	38,579	619	16·0	40,829	681	16·7
1901	24,704	550	22·3	54,686	843	15·4	23,921	555	23·2	33,624	760	22·6	38,827	582	15·0	42,250	741	17·6
1902	24,516	507	20·3	55,606	761	13·4	23,773	517	21·3	33,384	636	18·7	39,025	589	14·8	44,185	679	15·1
1903	24,077	517	21·5	56,825	758	13·3	23,541	463	19·7	33,710	570	16·9	39,359	531	13·5	45,427	714	15·7
1904	24,157	532	22·0	55,596	843	15·2	23,451	538	22·9	33,346	765	22·9	40,140	595	14·8	46,761	784	16·8
1905	23,723	489	20·6	58,464	782	13·4	23,395	469	20·1	32,827	588	17·9	40,412	517	12·8	47,318	641	13·5
1906	23,770	537	22·6	59,818	800	13·4	22,926	428	18·7	33,696	672	19·9	40,956	505	12·3	50,796	683	13·4
1907	23,180	493	21·3	61,032	791	12·9	23,049	478	20·7	32,314	662	20·5	40,269	548	13·6	53,524	694	13·0
1908	22,746	473	20·8	62,018	778	12·5	22,174	461	20·8	32,741	673	20·6	40,260	550	13·7	53,914	732	13·6

Note.—The inmates of large Institutions are not included in the Ward populations, and the deaths amongst them have been referred, as far as possible, to the Wards in which the deceased persons had previously resided.

TABLE III.

Cases of Infectious Disease Notified during the Year 1908.

Classified according to ages, wards, and institutions.

DISEASE.	AGES.													WARDS.																		Institutions.	City.
	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 to 85.	85 and up.	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hall.	St. Thomas'.	St. Martin's.	Edgbaston and Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath.	Saltley.		
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Scarlet Fever ...	23	682	981	352	81	57	82	17	...	...	...	...	...	260	203	59	51	114	107	22	56	16	46	75	75	90	259	84	159	307	211	81	2275
Diphtheria... ...	9	216	246	106	63	65	58	23	5	1	1	1	...	75	74	49	23	31	39	17	25	17	21	48	47	27	74	34	44	57	72	29	794
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever ...	..	12	20	23	22	28	45	32	8	2	...	...	1	10	17	11	9	5	17	4	13	...	7	5	5	6	11	7	29	9	11	17	193
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Relapsing Fever ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	...	...	...	...	...	3	11	3	...	...	...	...	...	...	...	2	...	...	1	...	1	1	...	1	...	...	4	2	3	...	2	...	17
Cholera	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	9	28	20	13	26	24	68	100	80	58	34	15	1	46	41	18	6	18	15	14	32	3	18	15	10	19	24	26	53	26	54	38	476
Totals ..	41	938	1267	494	192	177	264	175	93	61	35	16	2	391	335	130	89	168	179	57	127	37	92	144	137	142	372	153	288	399	350	165	3755

TABLE IV.

Deaths Registered in or Belonging to the City of Birmingham during the Year ending January 2nd, 1909.

DISEASES.	AGES.												All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males.	Females.	Persons.
Smallpox—																
(*a*) Vaccinated	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*b*) Unvaccinated	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*c*) No Statement	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	13	41	7	2	..	..	..	..	..	..	..	.	..	32	31	63
Scarlet Fever	6	45	18	3	1	1	2	1	..	..	..	..	..	46	31	77
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza	2	4	2	2	6	..	11	18	21	38	40	11	3	82	76	158
Whooping Cough	121	187	5	..	..	..	..	..	..	..	..	..	..	146	167	313
Diphtheria, Membranous Croup	2	58	34	6	1	..	2	2	..	..	..	..	..	54	51	105
Enteric Fever	..	2	1	4	2	5	17	11	5	1	1	..	..	26	23	49
Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa, Dysentery	208	52	2	..	..	1	.	1	..	1	5	2	1	143	130	273
Epidemic Enteritis	156	35	3	..	..	..	1	1	1	..	..	..	..	102	95	197
Epid. Cerebro Spinal Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Varicella	1	..	..	..	..	..	..	..	..	..	..	..	.	1	..	1
Epidemic Rose-rash	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	.
Mumps	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hydrophobia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glanders, Farcy	..	..	..	..	..	..	..	..	.	..	..	..	..	.	..	..
Tetanus	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1
Anthrax, Splenic Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cowpox, Acc. of Vaccination	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Syphilis	26	3	..	..	1	..	..	1	1	2	1	..	..	24	11	35
Gonorrhœa	..	..	..	..	..	..	..	.	1	1	1	1	..	4	..	4
Phagedæna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	3	..	..	..	..	..	2	..	1	..	2	2	..	7	3	10
Puerperal Fever	..	..	..	..	..	2	5	1	..	..	..	..	..	..	8	8
Pyæmia, Septicæmia	4	2	2	..	1	1	2	2	1	1	..	..	..	7	9	16
Infective Endocarditis	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
Cancrum Oris	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Stomatitis	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1
Carbuncle	..	..	..	..	..	..	..	..	..	1	1	1	..	3	..	3
Cellulitis	4	1	..	..	..	.	..	..	1	4	4	..	..	10	4	14
Malarial Fever	.	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..
Rheumatic Fever	..	1	6	3	2	5	3	4	4	.	..	..	..	11	17	28
Rheumatism of Heart	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis of Brain	26	32	7	3	3	..	..	..	1	..	..	..	..	48	24	72
Tuberculosis of Larynx	..	..	..	..	..	2	2	2	..	1	..	..	..	3	4	7
Phthisis	2	13	8	12	39	46	201	177	155	61	26	1	..	509	232	741
Abdominal Tuberculosis	17	24	4	..	1	1	1	4	..	..	1	..	..	25	28	53
General Tuberculosis	12	20	6	2	2	2	4	6	3	..	1	..	..	30	28	58
Other forms of Tuberculosis	1	5	3	.	2	1	4	2	2	1	1	..	..	14	8	22
Thrush	1	..	..	..	..	..	..	.	..	..	..	..	..	..	1	1
Actinomycosis	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..
Hydatid Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scurvy	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..
Ptomaine Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Acute Alcoholism	..	..	..	..	..	..	1	2	2	..	..	..	..	3	2	5
Chronic Alcoholism	..	..	..	..	..	..	1	6	7	5	..	..	..	10	9	19
Lead Poisoning	..	..	..	..	..	..	1	..	..	1	..	..	..	1	1	2
Osteo-arthritis Rheumatoid-arthritis	..	..	..	1	..	1	3	3	1	6	11	5	..	13	18	31
Gout	..	..	..	..	..	..	..	..	..	4	5	1	..	5	5	10
Cancer	..	2	1	1	1	3	11	51	84	132	117	34	4	193	248	441
Diabetes Mellitus	..	..	..	1	..	..	9	7	4	15	12	..	..	24	24	48
Purpura Hæmorrhagica	3	1	..	..	..	..	..	3	..	..	..	1	..	4	4	8
Hæmophilia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anæmia, Leucocythæmia	1	1	1	..	2	..	3	4	10	4	3	2	..	12	19	31
Lymphadenoma, Hodgkin's Dis.	..	..	..	..	..	1	1	..	..	1	..	..	..	2	1	3
Premature Birth	338	..	..	..	..	..	..	..	..	..	..	..	..	201	137	338
Injury at Birth	9	..	..	..	..	..	..	..	..	..	..	..	..	6	3	9
Debility at Birth	213	2	..	..	..	..	..	..	..	..	..	..	..	132	83	215
Atelectasis	39	..	..	..	..	..	..	..	..	..	..	..	..	23	16	39

TABLE IV.—*continued.*

Deaths Registered in or Belonging to the City of Birmingham during the Year ending January 2nd, 1909.

DISEASES.	AGES.												All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males.	Females.	Persons.
Congenital Defects	48	1	1	..	..	..	..	..	..	..	..	..	..	31	19	50
Want of Breast Milk	25	1	..	..	..	..	..	..	..	..	..	..	..	14	12	26
Atrophy, Debility, Marasmus	244	46	..	..	..	..	..	..	..	..	..	..	..	159	131	290
Dentition	17	15	..	..	..	..	..	..	..	..	..	..	..	14	18	32
Rickets	3	14	..	..	..	..	..	..	..	..	..	..	..	12	5	17
Old Age, Senile Decay	..	..	..	..	..	..	..	..	..	10	114	221	74	175	244	419
Convulsions	104	25	1	1	..	..	1	1	..	..	..	..	..	67	66	133
Meningitis	43	49	14	3	1	..	7	2	6	7	1	..	..	70	63	133
Encephalitis	..	..	1	1	1	..	1	..	..	..	..	..	..	3	1	4
Apoplexy	..	..	..	..	1	..	2	2	13	19	20	14	..	30	41	71
Softening of Brain	..	..	..	..	..	..	..	1	2	7	17	11	2	16	24	40
Hemiplegia	..	..	..	..	2	1	..	2	6	12	15	9	2	25	24	49
General Paralysis of Insane	..	..	..	..	..	..	5	12	7	4	2	1	..	25	6	31
Other forms of Insanity	..	..	..	..	..	..	..	..	2	4	11	8	..	19	6	25
Chorea	..	..	1	1	..	..	..	..	..	..	1	..	..	3	..	3
Cerebral Tumour	..	..	..	2	1	2	4	2	2	..	..	..	..	4	9	13
Epilepsy	..	1	..	3	2	4	8	9	5	5	7	2	..	23	23	46
Laryngismus Stridulus	6	2	..	..	..	..	..	..	..	..	..	..	..	7	1	8
Locomotor Ataxy	..	..	..	..	..	..	..	4	2	2	..	..	..	7	1	8
Paraplegia, Diseases of Cord	1	1	..	2	..	..	1	3	9	5	8	6	..	21	15	36
Cerebral Congestion	.	..	..	..	..	..	..	2	..	..	..	..	..	1	1	2
Cerebral Effusion	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
Cerebro-Spinal Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..
Neuritis	..	..	..	..	..	..	..	3	3	4	1	..	..	6	5	11
Other Diseases of Brain or Nerves	1	2	..	..	..	..	1	1	3	1	4	4	1	12	6	18
Otitis, Mastoid Disease	2	4	1	1	3	..	3	2	..	1	..	.	..	8	9	17
Disease of Nose, Epistaxis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Eye	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pericarditis	..	1	2	2	1	..	1	.	1	..	1	..	..	4	5	9
Endocarditis, Valvular Disease	..	..	6	4	16	8	11	28	42	40	37	7	1	90	110	200
Hypertrophy of Heart	..	..	..	..	.	..	..	..	..	..	..	..	.	..	..	..
Angina Pectoris	..	..	..	..	..	..	..	1	..	5	2	..	..	4	4	8
Aneurism	..	..	..	..	..	..	..	3	3	5	2	..	..	9	4	13
Senile Gangrene	..	..	..	..	..	..	..	..	..	1	4	4	1	5	5	10
Embolism, Thrombosis	..	..	..	..	1	1	2	5	6	14	15	2	..	28	18	46
Phlebitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Varicose Veins	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cardiac Dilatation	..	..	..	..	..	..	1	1	..	2	2	3	1	8	2	10
Heart Disease (not defined)	12	3	9	9	7	5	20	51	87	122	112	42	7	229	257	486
Other Diseases of Heart	..	..	..	..	..	..	1	1	8	7	9	2	1	11	18	29
Atheroma	..	..	..	..	..	..	..	..	2	1	..	1	..	2	2	4
Arterio-sclerosis	..	..	..	..	..	..	..	3	1	1	5	3	..	9	2	11
Cerebral Hæmorrhage	1	1	..	..	1	..	5	15	34	60	77	40	4	100	138	238
Other Diseases of Blood Vessels	..	..	..	..	..	..	..	..	1	..	2	..	..	3	..	3
Laryngitis	..	4	3	..	..	..	2	1	1	..	..	..	..	2	9	11
Croup	1	2	..	..	..	..	..	..	..	..	..	..	..	2	1	3
Acute Bronchitis	151	70	2	2	..	..	2	10	5	21	18	10	1	154	138	292
Chronic Bronchitis	6	2	3	1	1	3	6	35	75	172	204	98	24	310	320	630
Lobar Pneumonia	7	11	1	..	10	6	15	20	15	22	11	5	1	74	50	124
Lobular Pneumonia	143	149	8	2	..	1	3	8	13	14	11	9	4	191	174	365
Pneumonia (not defined)	27	40	3	2	..	6	30	28	24	31	23	14	1	124	105	229
Emphysema, Asthma	..	..	..	..	..	..	..	2	3	6	5	4	1	15	6	21
Pleurisy	1	6	2	..	2	..	2	5	7	6	3	..	..	19	15	34
Fibroid Phthisis	..	..	..	..	..	..	1	1	..	4	1	..	..	6	1	7
Bronchiectasis	..	..	1	1	1	1	..	..	..	1	1	..	..	3	3	6
Other Dis. Respiratory System	..	1	..	..	..	..	..	1	3	..	..	..	..	3	2	5
Quinsy	1	..	1	..	..	1	..	..	..	1	..	..	..	1	3	4
Diseases of Pharynx	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Œsophagus	..	..	..	..	..	..	..	..	2	..	..	..	..	2	..	2
Ulcer of Stomach and Duodenum	..	..	..	..	..	3	3	5	9	5	2	..	..	11	16	27
Other Diseases of Stomach	25	12	..	1	1	1	..	1	4	7	4	2	2	32	28	60
Enteritis	128	39	3	..	2	3	4	3	5	12	7	4	..	124	86	210
Appendicitis	1	..	6	6	3	1	4	1	4	1	..	1	..	11	17	28
Obstruction of Intestine	7	..	..	..	..	1	1	6	10	8	12	7	..	26	26	52
Other Diseases of Intestine	..	..	..	..	..	..	..	..	..	..	1	.	..	..	1	1
Cirrhosis of Liver	.	..	..	..	2	..	1	6	29	16	4	1	..	27	32	59
Other Diseases of Liver	2	..	..	..	1	..	2	3	5	7	3	4	1	15	13	28
Peritonitis	2	..	4	..	2	1	3	4	1	3	..	1	..	8	13	21
Other Dis. of Digestive System	2	..	..	..	..	..	1	2	..	1	..	1	..	4	3	7

TABLE IV.—*continued.*

Deaths Registered in or Belonging to the City of Birmingham during the Year ending January 2nd, 1909.

DISEASES.	AGES.													All Ages.		
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75—	85—	Males.	Females.	Persons.
Diseases, Lymphatic System and Ductless Glands	..	1	..	1	1	1	3	2	2	1	..	..	..	3	9	12
Acute Nephritis	2	6	3	1	2	..	7	18	14	12	7	3	..	46	29	75
Bright's Disease	..	..	1	2	1	2	9	20	29	25	25	7	..	73	48	121
Calculus	1	..	..	..	..	..	..	1	2	1	2	..	..	4	3	7
Diseases of Bladder and Prostate	..	..	..	..	..	..	..	2	2	5	9	5	..	21	2	23
Other Diseases, Urinary System	..	..	..	..	..	1	1	..	1	1	..	..	..	..	4	4
Diseases of Testis and Penis	..	..	..	..	..	..	..	..	..	..	2	..	..	2	..	2
Diseases of Ovaries	..	..	..	..	..	..	1	1	1	1	2	..	..	..	6	6
Diseases of Uterus and Appendages	..	..	..	..	..	1	3	1	2	..	..	..	..	..	7	7
Diseases of Vagina and External Genitals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Breast	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Abortion, Miscarriage	..	..	..	..	..	..	1	2	..	..	..	..	..	..	3	3
Puerperal Mania	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Convulsions	..	..	..	..	2	..	5	1	..	..	..	..	..	..	8	8
Placenta Prævia, Flooding	..	..	..	..	..	..	6	12	..	..	..	..	..	..	18	18
Puerperal Thrombosis	..	..	..	..	..	1	1	3	..	..	..	..	..	..	5	5
"Parturition"	..	..	..	..	..	..	1	1	..	..	..	..	..	..	2	2
Other Diseases, Pregnancy and Childbirth	..	..	..	..	..	..	4	3	..	..	..	..	..	..	7	7
Arthritis, Ostitis, Periostitis	3	2	2	4	..	1	1	2	..	1	1	..	..	9	8	17
Other Diseases, Osseous System	..	3	..	1	..	..	..	..	..	..	1	..	..	3	2	5
Ulcer, Bedsore	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2	2
Eczema	3	..	..	..	..	..	..	..	..	..	..	..	..	2	1	3
Pemphigus	2	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Other Diseases, Integumentary System	3	..	..	..	..	..	1	..	..	..	..	1	..	3	2	5
By Accidents or Negligence:																
In Mines and Quarries	..	..	..	..	..	..	.	..	1	..	..	..	..	1	..	1
In Vehicular Traffic	1	4	3	1	..	1	2	2	3	3	3	1	..	15	9	24
On Railways	..	..	..	..	.	1	2	2	..	1	1	..	..	7	..	7
On Ships, Boats, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
In Building Operations	..	..	..	..	..	..	..	1	3	1	..	..	..	5	..	5
By Machinery	..	..	..	..	..	..	2	1	..	..	..	..	..	3	..	3
By Weapons and Implements	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Burns and Scalds	6	40	10	1	4	1	1	..	2	4	1	..	..	38	32	70
Poisons, Poisonous Vapours	..	..	..	..	..	1	1	..	..	1	..	..	..	3	..	3
Surgical Narcosis	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1
Effects of Electric Shock	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Corrosion by Chemicals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Drowning	..	2	1	5	1	..	2	2	..	..	1	..	..	11	3	14
Suffocation, Overlaid in Bed	78	1	..	..	..	..	..	..	..	..	..	..	..	41	38	79
,, Otherwise	9	4	..	..	..	..	..	..	..	..	..	1	..	9	5	14
Falls not specified	..	1	..	..	..	..	4	5	6	3	10	7	4	19	21	40
Weather Agencies	..	..	..	..	..	..	..	..	1	..	1	..	..	2	..	2
Otherwise, not stated	7	2	1	3	1	..	..	..	3	2	3	1	..	13	10	23
Homicide	3	..	..	..	1	..	..	..	..	..	..	..	..	2	2	4
Suicides:																
By Poison	..	..	..	..	..	..	2	2	3	1	2	..	..	7	3	10
By Asphyxia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
By Hanging and Strangulation	..	..	..	..	..	1	3	8	9	3	4	..	..	21	7	28
By Drowning	..	..	..	..	..	..	1	..	2	..	1	1	..	5	..	5
By Shooting	..	..	..	..	..	..	..	2	..	2	..	1	..	5	..	5
By Cut or Stab	..	..	..	..	..	..	2	3	6	..	..	1	..	9	3	12
By Precipitation from Elevated Places	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
By Crushing	..	..	..	..	..	..	1	2	..	1	..	..	..	4	..	4
By other and Unspecified Methods	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Execution	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sudden Death, cause not ascertained	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ill-defined & Unspecified Causes	2	1	..	..	2	1	1	1	3	3	..	2	..	6	10	16
Totals	2339	1102	205	103	141	134	510	705	861	1029	1089	633	141	4773	4219	8992

TABLE V.

Births and Deaths Registered in, or Belonging to, each Ward during the Year ending January 2nd, 1909.

CAUSES OF DEATH	WARDS.																			
	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hall.	St. Thomas'.	St. Martin's.	Edgbaston & Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath	Saltley.	Not located.	City.
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	1	..	2	..	..	1	3	..	..	1	2	2	4	6	2	21	6	8	4	63
Scarlet Fever	8	5	1	4	8	4	2	2	..	3	2	3	2	5	5	5	9	8	1	77
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza	18	16	8	4	5	2	2	8	5	6	4	11	10	14	5	12	8	12	8	158
Whooping Cough	30	35	18	14	35	32	9	21	3	6	8	4	15	18	11	16	10	18	10	313
Diphtheria, Memb. Croup	12	10	1	3	5	4	1	7	2	3	7	6	3	15	3	9	4	8	2	105
Croup	..	..	..	..	1	..	..	1	..	..	.	..	..	..	..	.	.	1	..	3
Enteric Fever	2	4	4	..	1	4	1	2	..	1	1	2	1	2	1	9	6	4	4	49
Asiatic Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	.	.	.	..
Diarrhœa, Dysentery	16	10	20	13	9	11	7	24	3	14	15	4	20	18	20	30	12	21	6	273
Epidem. or Zymotic Enteritis	4	21	5	4	22	33	15	15	..	5	3	4	5	8	10	27	9	7	..	197
Enteritis	5	20	11	4	12	22	17	12	5	8	6	5	5	14	14	18	18	10	4	210
Other Continued Fevers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Erysipelas	..	2	..	..	..	1	..	1	..	1	1	..	..	..	..	..	..	..	4	10
Puerperal Fever	..	..	2	..	..	1	..	..	..	..	1	..	1	2	..	1	..	..	..	8
Other Septic Diseases	2	3	2	1	1	1	3	2	..	2	..	1	1	3	3	..	4	5	3	37
Intermittent Fever and Malarial Cachexia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis of Meninges	9	5	7	1	4	1	4	3	2	2	1	3	3	8	2	3	5	5	4	72
Tuberculosis of Lungs	54	57	36	23	31	42	30	46	16	29	44	28	47	56	28	43	53	63	15	741
Abdominal Tuberculosis	4	6	..	3	4	..	1	6	..	2	..	3	..	8	2	8	1	5	..	53
Other forms of Tuberculosis	7	6	3	4	4	5	5	2	..	5	3	1	4	7	9	9	1	9	3	87
Alcoholism	..	2	..	1	1	1	1	1	5	1	2	1	1	3	2	..	..	1	1	24
Cancer	40	31	21	11	20	17	11	30	2	11	20	30	18	55	16	23	33	39	13	441
Premature Birth	33	27	12	9	10	23	2	19	4	17	15	12	16	34	17	33	29	19	7	338
Congenital Defects	18	20	8	5	16	8	7	13	4	12	12	15	17	28	29	30	15	31	25	313
Developmental Diseases	26	21	14	16	22	22	13	25	10	11	20	9	29	28	21	22	11	26	19	365
Old Age	19	24	23	4	12	15	18	23	5	18	14	17	16	44	29	38	33	29	38	419
Meningitis	6	14	8	3	10	16	7	6	2	3	2	3	6	4	7	13	4	7	12	133
Convulsions	7	12	2	1	7	8	2	12	3	2	4	5	8	15	9	10	13	13	..	133
Diseases of Heart	49	62	41	19	32	31	14	32	16	23	32	40	46	58	37	44	54	82	30	742
Cerebral Hæmorrhage	14	26	7	8	17	9	9	7	3	5	8	12	12	24	18	17	13	18	11	238
Bronchitis	61	66	38	35	46	63	34	84	12	26	34	31	62	72	47	65	48	65	33	922
Pneumonia	48	55	31	23	38	52	21	51	11	30	25	36	25	54	32	55	29	72	30	718
Diseases of Stomach	5	6	2	1	1	9	7	3	1	3	3	5	6	12	6	5	4	7	1	87
Obstruction of Intestines	7	3	3	3	..	2	2	2	1	2	1	1	3	6	4	5	2	3	2	52
Cirrhosis of Liver	3	5	2	..	2	3	3	4	..	3	3	3	4	6	3	4	4	7	..	59
Nephritis and Bright's Dis.	20	8	6	7	9	9	9	11	3	8	11	1	9	29	11	10	14	16	5	196
Tumours and other Affections of Female Genital Organs	2	3	..	..	..	1	..	..	..	..	..	3	..	1	1	..	1	..	1	13
Accidents and Diseases of Parturition	4	3	2	2	1	2	1	2	1	3	2	1	4	3	1	1	4	6	..	43
Accidents or Negligence	23	14	8	9	16	18	13	19	5	8	15	12	19	21	12	32	12	25	5	286
Suicides	5	5	2	..	3	1	2	3	..	..	3	4	7	3	1	4	10	6	5	64
Ill-defined Causes	3	3	1	..	1	..	..	..	..	1	..	1	..	2	..	..		2	2	16
All other Causes	80	71	43	17	24	43	33	43	17	35	51	43	44	92	43	51	71	74	58	933
Total Deaths	645	681	394	252	430	517	309	542	141	310	375	362	473	778	461	673	550	732	367	8992
Deaths under One Year	164	187	89	75	118	170	81	156	30	87	85	63	129	175	142	213	113	180	82	2339
Births	1398	1382	756	374	697	796	390	775	144	568	619	677	809	1639	817	1247	1084	1711	258	16141

TABLE VI.

Deaths, under 1 year, Registered in, or belonging to, each Ward during the Year ending January 2nd, 1909.

CAUSES OF DEATH.	WARDS.																			
	Rotton Park.	All Saints'.	Ladywood.	St. Paul's.	St. George's.	St. Stephen's.	St. Mary's.	St. Bartholomew's.	Market Hall.	St. Thomas'.	St. Martin's.	Edgbaston & Harborne.	Deritend.	Bordesley.	Duddeston.	Nechells.	Balsall Heath	Saltley.	Not located.	City.
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	..	..	1	..	..	1	..	..	..	1	1	2	1	1	1	3	..	1	..	13
Scarlet Fever	..	..	..	..	..	..	..	..	..	2	..	..	..	1	1	..	..	2	..	6
Epidemic Influenza	..	..	..	..	..	..	..	1	.	1	..	..	..	..	..	..	..	..	..	2
Whooping Cough	13	21	7	7	11	10	3	7	1	1	3	2	6	4	3	6	2	9	5	121
Diphtheria, Memb. Croup	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2
Croup	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Enteric Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa, Dysentery	14	9	18	8	5	10	5	17	2	13	10	4	13	15	16	23	9	12	5	208
Epidem. or Zymotic Enteritis	4	17	4	4	14	28	13	12	..	4	1	4	5	7	7	23	5	4	..	156
Enteritis	2	15	7	3	7	16	13	9	2	6	4	..	4	10	8	6	11	5	..	128
Other continued Fevers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Erysipelas	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	3
Other Septic Diseases	1	1	..	1	1	..	..	1	..	..	..	..	..	..	1	..	2	..	..	8
Tuberculosis of Meninges	5	3	1	..	..	..	1	1	1	1	..	3	2	2	1	1	..	1	3	26
Tuberculosis of Lungs	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	2
Abdominal Tuberculosis	3	4	..	1	2	..	..	2	..	..	..	..	..	..	1	3	..	1	..	17
Other Forms of Tuberculosis	3	1	..	..	2	..	2	..	..	..	1	.	1	1	1	1	..	..	..	13
Cancer	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.
Premature Birth	34	26	12	9	10	23	2	19	4	17	15	12	16	34	17	33	29	19	7	338
Congenital Defects	18	20	8	5	16	8	7	12	4	12	12	15	17	28	29	28	15	31	24	309
Developmental Diseases	21	14	11	15	17	13	11	23	8	7	15	6	26	23	17	14	7	24	17	289
Meningitis	3	3	4	2	4	5	..	2	..	1	1	1	1	1	1	8	1	3	2	43
Convulsions	5	9	2	1	6	6	2	11	2	1	2	4	6	13	7	10	7	10	..	104
Diseases of Heart	..	1	..	..	..	..	..	..	..	..	..	..	3	..	2	..	4	2		12
Cerebral Hæmorrhage	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	.	..	1
Bronchitis	11	14	3	4	5	12	6	13	.	5	5	2	13	12	10	16	5	19	2	157
Pneumonia	12	13	4	8	10	19	5	16	3	6	6	4	8	9	7	13	5	24	5	177
Diseases of Stomach	..	..	..	..	..	2	6	1	..	2	..	..	1	4	3	4	1	1	..	25
Obstruction of Intestines	1	2	..	..	..	..	1	..	..	..	..	..	..	2	..	..	..	1	..	7
Nephritis and Bright's Dis.	..	..	..	..	..	1	..	..	..	..	..	..	..	1	.	.	..	..	..	2
Accidents or Negligence	8	6	5	4	7	10	3	7	1	3	4	4	5	3	5	15	4	6	1	101
Ill-defined Causes	..	1	..	..	..	..	..	..	..	..	.	..	..	..	..	..	.	..	1	2
All other Causes	6	7	2	3	..	5	1	1	2	3	5	.	1	3	4	6	5	4	7	65
Total Deaths	164	187	89	75	118	170	81	156	30	87	85	63	129	175	142	213	113	180	82	2333

TABLE VII.—COMPARISON OF PREVALENCE OF SICKNESS AND DEATH FROM INFECTIOUS DISEASES.

(Rates calculated per 1,000 persons on the population estimated to the middle of each year.)

Year.	Smallpox.		Scarlet Fever.		Diphtheria. Membranous Croup.		Typhus Fever.		Typhoid Fever.		Puerperal Fever.		Erysipelas.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
*1890	...	...	7·31	0·49	0·69	?	0·00	...	0·66	0·14	0·03	0·00	0·97	0·04
*1891	0·11	0·02	3·42	0·21	0·48	?	...	...	0·93	0·18	0·03	0·01	0·86	0·03
1892	0·06	...	2·94	0·14	1·10	0·21	...	...	0·54	0·08	0·08	0·05	1·18	0·07
1893	2·01	0·14	3·31	0·14	0·79	0·17	0·01	...	1·00	0·19	0·11	0·08	1·75	0·05
1894	4·22	0·35	3·64	0·15	0·83	0·18	...	...	1·04	0·21	0·09	0·04	1·57	0·03
1895	0·20	0·02	6·00	0·27	1·50	0·43	...	...	0·88	0·17	0·05	0·03	1·65	0·04
1896	0·03	0·01	6·65	0·32	2·35	0·58	...	...	0·95	0·21	0·06	0·04	1·54	0·04
1897	...	...	3·81	0·19	1·41	0·32	0·00	0·00	1·06	0·18	0·03	0·02	1·16	0·04
1898	...	...	2·60	0·09	1·36	0·26	...	...	1·25	0·22	0·05	0·03	1·25	0·03
1899	...	...	2·44	0·06	1·40	0·29	...	...	1·52	0·23	0·06	0·03	1·23	0·04
1900	0·00	...	3·98	0·18	1·05	0·15	...	...	1·64	0·35	0·08	0·05	1·31	0·05
1901	...	...	6·35	0·29	1·02	0·16	...	...	1·18	0·21	0·06	0·05	1·39	0·04
1902	0·13	0·01	9·39	0·55	1·47	0·24	...	...	1·01	0·19	0·07	0·04	1·42	0·06
1903	0·47	0·02	5·33	0·27	1·66	0·25	...	...	0·65	0·12	0·06	0·04	1·21	0·04
1904	0·01	...	3·09	0·12	1·17	0·21	...	...	0·46	0·07	0·07	0·05	1·11	0·05
1905	0·07	0·00	3·11	0·10	1·29	0·18	...	...	0·39	0·07	0·07	0·04	1·10	0·06
1906	...	...	3·32	0·10	1·50	0·17	...	...	0·35	0·07	0·05	0·03	1·08	0·04
1907	...	...	4·58	0·17	1·84	0·18	...	...	0·45	0·09	0·09	0·05	1·08	0·03
1908	...	...	4·01	0·14	1·40	0·18	...	...	0·34	0·09	0·03	0·01	0·84	0·02

* Prior to enlargement of City.

TABLE VIII.

NUMBER OF CASES REPORTED UNDER THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889, DURING EACH WEEK OF THE YEAR 1908.

Week. Number.	Date of ending.	Smallpox.	Scarlet Fever.	Diphtheria.	Typhus Fever.	Typhoid Fever.	Simple Continued Fever.	Relapsing Fever.	Puerperal Fever.	Cholera.	Erysipelas.	TOTAL.
	1908.											
1	January 4th	...	54	17	...	2	...	...	...	...	15	88
2	,, 11th	...	47	13	...	10	...	...	...	...	6	76
3	,, 18th	...	61	20	...	5	...	...	1	...	11	98
4	,, 25th	...	42	16	...	5	...	...	...	...	16	79
5	February 1st	...	49	18	...	6	...	...	...	...	11	84
6	,, 8th	...	38	28	...	8	...	...	1	...	15	90
7	,, 15th	...	47	17	...	2	...	...	...	...	13	79
8	,, 22nd	...	60	16	...	1	...	...	...	...	14	91
9	,, 29th	...	37	9	...	2	...	...	...	...	14	62
10	March 7th	...	40	19	...	1	...	...	...	...	6	66
11	,, 14th	...	43	16	...	5	...	...	1	...	6	71
12	,, 21st	...	57	18	...	2	...	...	...	...	4	81
13	,, 28th	...	56	16	...	2	...	...	...	...	6	80
14	April 4th	...	44	12	...	1	...	...	...	...	10	67
15	,, 11th	...	42	8	...	6	...	...	1	...	7	64
16	,, 18th	...	33	18	...	1	...	...	1	...	2	55
17	,, 25th	...	39	8	...	6	...	...	...	...	8	61
18	May 2nd	...	34	14	...	3	...	...	...	...	9	60
19	,, 9th	...	40	9	...	...	...	...	...	...	9	58
20	,, 16th	...	34	12	...	2	...	...	...	...	12	60
21	,, 23rd	...	29	11	...	...	...	...	1	...	9	50
22	,, 30th	...	46	15	...	5	...	...	...	...	6	72
23	June 6th	...	35	10	...	3	...	...	...	...	8	56
24	,, 13th	...	31	13	...	5	...	...	...	...	7	56
25	,, 20th	...	27	14	...	1	...	...	2	...	7	51
26	,, 27th	...	41	18	...	1	...	...	1	...	13	74
27	July 4th	...	35	10	...	1	...	...	1	...	6	53
28	,, 11th	...	33	12	...	5	...	...	...	...	5	55
29	,, 18th	...	31	19	...	1	...	...	...	...	8	59
30	,, 25th	...	43	17	...	2	...	...	...	...	3	65
31	August 1st	...	30	11	...	1	...	...	...	...	7	49
32	,, 8th	...	38	9	...	...	...	...	2	...	2	51
33	,, 15th	...	37	11	...	1	...	...	...	...	15	64
34	,, 22nd	...	40	12	...	2	...	...	1	...	7	62
35	,, 29th	...	30	16	...	3	...	...	...	...	6	55
36	September 5th	...	38	9	...	5	...	...	1	...	8	61
37	,, 12th	...	44	13	...	5	...	...	...	...	14	76
38	,, 19th	...	39	13	...	3	...	...	...	...	11	66
39	,, 26th	...	52	12	...	6	...	...	...	...	8	78
40	October 3rd	...	47	18	...	6	...	...	...	...	8	79
41	,, 10th	...	31	20	...	4	...	...	...	...	6	61
42	,, 17th	...	43	22	...	5	...	...	...	...	8	78
43	,, 24th	...	41	15	...	10	...	...	...	...	14	80
44	,, 31st	...	62	14	...	5	...	...	...	...	12	93
45	November 7th	...	52	16	...	10	...	...	...	...	10	88
46	,, 14th	...	67	21	...	6	...	...	...	...	9	103
47	,, 21st	...	57	16	...	9	...	...	...	...	7	89
48	,, 28th	...	53	20	...	6	...	...	1	...	9	89
49	December 5th	...	43	12	...	4	...	...	...	...	11	70
50	,, 12th	...	51	21	...	1	...	...	1	...	14	88
51	,, 19th	...	52	19	...	3	...	...	1	...	8	83
52	,, 26th	...	42	13	...	3	...	...	...	...	7	65
	1909.											
53	January 2nd	...	38	18	...	1	...	...	...	...	9	66
	TOTALS	...	2275	794	...	193	...	...	17	...	476	3755

Cases removed to City Hospital :—Smallpox, 0 ; Scarlet Fever, 2062 ; Diphtheria, 510 ; Typhoid Fever, 110.

TABLE IX.

TEMPERATURE OF THE AIR AND GROUND. RAINFALL, SUNSHINE, AND WIND, IN EACH MONTH OF THE YEAR 1908.

Observed at the Birmingham and Midland Institute Observatory, Edgbaston, by Mr. Alfred Cresswell.

MONTH.	TEMPERATURE OF THE AIR.						TEMPERATURE OF THE GROUND.		HOURS OF SUNSHINE.		RAINFALL IN INCHES.		DAYS ON WHICH 0·01 INCH OR MORE OF RAIN FELL.	MILES OF WIND	
	Highest in the shade.		Lowest in the shade.		Mean for the Month.		Maximum at 1 foot deep.	Maximum at 4 feet deep.							
	1908.	Above or below the previous highest. *	1908.	Above or below the previous lowest. *	1908.	Above or below the average. *			1908.	Above or below the average. *	1908.	Above or below the average. *		1908.	Above or below the average.
JAN....	54·2	− 3·8	17·3	+ 6·5	36·0	− 1·7	43·4	45·0	20	− 14	0·81	− 1·09	10	10449	+ 276
FEB....	50·8	− 11·1	29·1	+ 21·1	41·4	+ 3·4	43·1	43·9	32	− 20	1·21	− 0·35	14	11751	+ 2427
MAR.	55·4	− 11·2	28·3	+ 7·0	39·0	− 2·1	41·7	43·7	57	− 32	3·05	+ 1·31	20	10010	− 439
APR.	60·1	− 18·9	27·6	+ 0·1	40·9	− 4·4	44·6	43·6	74	− 40	2·34	+ 0·87	15	10321	+ 1057
MAY...	77·4	− 0·2	39·4	+ 8·4	54·9	+ 3·9	53·1	48·0	141	+ 6	3·01	+ 0·90	12	8835	− 277
JUNE	78·7	− 4·1	42·5	+ 4·9	57·3	− 0·1	59·0	51·0	164	+ 16	3·22	+ 1·17	10	7916	− 377
JULY	82·0	− 6·0	49·3	+ 9·8	60·7	+ 0·6	59·1	53·3	150	+ 6	2·22	+ 0·01	11	7854	− 324
AUG.	80·3	− 8·9	45·9	+ 4·7	58·3	− 0·8	59·6	54·2	133	− 8	2·39	− 0·47	15	9211	+ 600
SEPT.	77·0	− 13·6	38·3	+ 5·3	54·6	− 1·2	56·6	53·3	78	− 38	2·33	+ 0·63	15	8237	+ 229
OCT....	76·5	+ 6·5	31·5	+ 3·6	53·2	+ 5·1	57·9	53·6	77	+ 8	2·01	− 0·73	11	6756	− 2237
NOV.	57·6	− 4·0	25·2	+ 5·2	45·4	+ 2·4	51·0	51·3	40	+ 5	1·84	− 0·35	12	8790	− 387
DEC.	50·7	− 5·3	14·4	− 0·1	38·7	+ 0·2	46·0	48·6	14	− 14	2·06	− 0·27	13	7487	− 2709

* In the twenty-one years 1887-1907.

TABLE X.

Temperature and Rainfall in each Month and Year from 1898 to 1908

MEAN TEMPERATURE.

(From Maximum and Minimum Readings.)

Month	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	Average for 21 years 1887-1907	1908
	°	°	°	°	°	°	°	°	°	°	°	°
Jan.	42·6	40·6	39·2	37·4	40·2	39·1	38·8	37·9	40·6	38·1	37·7	36·0
Feb.	39·6	40·8	36·2	35·4	34·1	43·9	37·1	40·7	37·1	37·0	38·0	41·4
Mar.	38·7	41·2	37·8	38·6	44·6	44·0	39·7	43·9	40·8	44·1	41·1	39·0
Apr.	46·5	46·0	47·2	47·4	45·4	43·3	47·7	44·4	45·2	45·4	45·3	40·9
May	49·4	49·5	50·0	52·7	47·8	51·6	51·6	51·0	50·6	50·9	51·0	54·9
June	56·2	59·1	57·9	56·7	56·5	54·8	56·0	58·7	57·6	54·1	57·4	57·3
July	59·3	62·9	64·1	64·5	58·3	59·5	63·3	63·3	61·4	57·3	60·1	60·7
Aug.	57·4	64·5	59·6	60·5	57·5	57·2	59·1	57·9	63·4	57·8	59·1	58·3
Sept.	59·4	56·1	57·0	57·0	55·4	55·4	53·9	54·0	57·9	57·3	55·8	54·6
Oct.	51·5	49·0	49·1	49·3	49·2	50·4	49·7	44·7	50·9	49·5	48·1	53·2
Nov.	44·3	47·0	44·6	40·5	43·9	43·4	41·6	40·6	44·8	43·9	43·0	45·4
Dec.	44·6	35·9	44·0	37·5	39·5	37·5	38·4	40·0	37·5	39·5	38·5	38·7
Year	49·1	49·4	48·9	48·1	47·7	48·3	48·0	48·1	49·0	47·9	48·0	48·3

TOTAL RAINFALL.

Month	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	Average for 21 years 1887-1907	1908
Jan.	0·83	3·44	3·53	1·37	1·02	1·97	2·92	0·95	3·85	0·90	1·90	0·81
Feb.	1·47	1·99	4·28	1·34	1·60	1·41	3·80	0·68	2·04	1·09	1·56	1·21
Mar.	0·63	1·02	0·70	1·76	1·59	4·63	1·54	3·52	1·13	1·01	1·74	3·05
Apr.	1·85	2·40	0·92	1·95	2·49	1·64	1·12	2·30	1·32	1·93	1·47	2·34
May	2·62	2·20	2·09	1·11	2·95	2·67	2·25	0·28	2·78	3·93	2·11	3·01
June	1·06	3·28	2·41	1·84	2·40	1·66	0·46	2·00	2·86	2·57	2·05	3·22
July	1·29	1·10	1·74	3·13	1·59	2·14	2·50	1·91	0·89	2·90	2·21	2·22
Aug.	2·57	1·08	2·89	2·13	4·43	5·16	1·85	4·40	0·89	2·28	2·86	2·39
Sept.	0·64	2·80	0·80	0·65	1·49	2·55	1·40	1·01	1·18	0·90	1·70	2·33
Oct.	2·74	2·37	3·08	1·84	2·33	6·55	0·88	1·34	4·86	5·80	2·74	2·01
Nov.	2·51	1·49	2·40	1·23	2·23	1·65	1·37	3·04	2·58	2·07	2·19	1·84
Dec.	2·24	1·95	4·25	4·29	1·86	1·80	1·81	0·83	2·14	3·43	2·33	2·06
Year	20·45	25·12	29·09	22·64	25·98	33·83	21·94	22·30	26·56	28·86	24·89	26·51

TABLE XI.

Summary of Nuisances abated and other work done during the years 1907 and 1908.

	1907.	1908.
ABATEMENT OF NUISANCES.		
Houses cleansed (walls and ceilings) ...	1,337	857
Houses repaired...	2,685	1,659
Houses provided with better ventilation ..	87	53
Damp courses inserted	119	127
Cases of overcrowding remedied	30	39
Accumulations of water in cellars removed	296	282
Rain-water spouts repaired or disconnected	500	473
Ashpit privies converted to water-closets	179	212
Pan privies converted to water closets .	2,643	2,426
Privies and closets limewashed	540	359
Water-closets repaired or altered ...	1,483	1,285
Ashplaces repaired or reconstructed ...	350	317
Additional water-closets provided .. .	95	63
Additional ashtubs provided	1,143	1,263
Urinals repaired or reconstructed	45	31
Drains relaid or repaired	617	547
Drains opened and cleansed	3,208	2,858
Drains efficiently trapped	2,146	2,562
Drains in cellars disconnected from the sewer or abolished	31	53
New sinks provided	540	785
Sink drains disconnected from the sewer .	22	16
Sink bend-pipes repaired or affixed	100	131
Premises supplied with additional drains ...	300	490
Back yards paved	63	46
Back yards repaired	315	378
Tenants made to cleanse yard and outbuildings	144	162
Wash-houses repaired	302	280
Premises from which fowls have been removed	56	94
Nuisances from swine and swine styes abated	24	10
Accumulations of wash, manure &c., removed	263	224
Other nuisances abated...	108	242
Number of persons summoned...	28	8
Amount of penalties	£0/5/0	£0/0/0
Amount of costs...	£8/2/0	£2/1/0
WORK OF CLEANSING STAFF.		
Courts cleansed by arrangement	6,425	6,676
Other courts cleansed	3,561	5,477
Pan privies swilled	17,139	15,631
Ashplaces swilled	31,860	33,579

TABLE XI. *continued.*

	1907.	1908.
Houses stripped and limewashed	168	99
Other buildings limewashed	12	31
Amount charged	£82/7/6	£51/7/0
INSPECTION OF WATER-CLOSETS.		
Number of water-closets inspected	60,373	52,839
Number found with dirty basins	5,097	4,488
Number found with dirty seats	1,833	2,466
Number found with dirty floors	1,843	2,486
Number found obstructed	1,266	959
Number found defective	497	532
INFECTIOUS DISEASES.		
Houses disinfected	4,172	3,740
Beds, pillows, sheets, &c. disinfected	29,486	27,704
Garments disinfected	10,310	11,251
Other articles disinfected	13,296	11,767
Persons summoned	2	1
Amount of penalties	£0/5/0	£0/0/0
Amount of costs...	—	£0/3/6
SMOKE NUISANCES.		
Observations made by inspectors	7,934	7,125
Infringements reported...	275	243
Manufacturers cautioned	119	108
Manufacturers summoned	116	111
Amount of penalties	£89/0/0	£66/12/6
Amount of costs...	£41/0/8	£38/12/6
LODGING HOUSES.		
Number of common lodging houses	38	42
Lodgers allowed...	2,216	2,502
Registered houses let in lodgings	430	511
Lodgers allowed...	2,381	2,788
Visits by day to common lodging houses and houses let in lodgings	7,615	7,789
Visits by night to common lodging houses . .	677	510
Keepers summoned	0	1
Amount of penalties	—	£0/5/0
Amount of costs...	—	£0/8/0

TABLE XI.—*continued.*

	1907.	1908.
CANAL BOATS.		
Number of canal boats on register ...	391	396
Number of inspections made	1,047	1,080
Breaches of regulations discovered :		
Cases of overcrowding	13	7
Sexes not separated...	6	2
Want of cleanliness...	3	0
Water receptacle not provided	17	8
Not in habitable condition	1	0
Other contraventions	41	44
FACTORY AND WORKSHOP ACT, 1901		
Factories inspected	1,080	926
Workshops inspected	8,003	8,690
Workplaces inspected	752	771
Homeworkers' premises inspected	1,749	1,849
Nuisances under Public Health Act :		
Want of cleanliness...	2,142	2,165
Want of ventilation...	34	58
Overcrowding	3	2
Want of drainage of floors	14	11
Premises requiring repairs	76	105
Accumulations of rubbish	193	253
Defective drains	337	507
Other nuisances	300	449
Sanitary accommodation insufficient ...	81	88
Sanitary accommodation unsuitable or defective	1,805	1,839
Sanitary accommodation not separate for sexes	54	81
Offences under Factory and Workshop Act :		
Failure to send in lists of outworkers, &c.	56	1
Giving out work to unwholesome or infected premises	1	1
Persons summoned	24	4
Amount of penalties	£4/15/0	£1/5/0
Amount of costs...	£10/8/6	£1/2/0
Number of lists of outworkers received ...	455	388
Number of outworkers therein...	4,389	4,450
SHOP HOURS ACTS.		
Number of visits	1,095	11,260
Persons summoned	4	16
Amount of penalties	£0/7 6	£3/7/6
Amount of costs...	£1/16 0	£1/4/0

TABLE XI.—*continued.*

	1907.	1908.
SEATS FOR SHOP ASSISTANTS ACT.		
Number of visits	624	175
Persons summoned	0	0
Amount of penalties	—	—
Amount of costs...	—	—
DAIRIES AND MILKSHOPS.		
Dairies on the register	13	12
Milkshops on the register	2,461	2,582
Purveyors on the register	425	506
Visits to dairies	44	32
Visits to milkshops and milk stores	4,137	3,443
Dirty churns found at railway stations ...	2	1
Dirty vessels found at milkshops and milk stores...	29	22
Shops, cellars, and pantries limewashed ...	150	77
Lamp oil, fish, tripe, and vinegar businesses prohibited	15	5
HEALTH VISITORS' WORK.		
Number of visits	34,321	32,485
Number of revisits	10,668	9,712
Instructions given to—		
Clean rooms	2,195	1,581
Remove filth from cellar	460	337
Destroy rubbish	2,113	2,502
Remove bedroom slops	3,183	2,136
Open windows	4,132	2,813
Unstop chimneys	257	229
Cleanse bedding	856	736
Use additional bedroom	203	192
Screen off beds	76	95
Get larger house	197	180
Provide additional beds	305	138
Get rid of lodgers	93	100
Wash children	1,285	2,270
Feed infants suitably	7,290	7,720
Clothe infants suitably	7,222	6,668
Obtain medical advice	808	337
Clean yard and outhouses	614	950

TABLE XII.—ANALYSIS OF CORPORATION WATER SUPPLY BY THE CITY ANALYST.

Date of Receipt of Sample.	PLACE WHERE TAKEN	Parts per 100,000.								Appearance in 2ft. Tube.			
		Total Solid Matter.	Free Ammonia.	Albuminoid or Organic Ammonia.	Nitrogen in Nitrates.	Oxygen Consumed in 4 hours at 27° C. (80° F.)	Chlorine in Chlorides.	Hardness (as $CaCO_3$).	Alkalinity (as $CaCO_3$.)	Turbidity.*	Red.†	Yellow.†	Blue †
1908.													
Jan. 17th	Back 35 Ladywood Road ...	6·2	·000	·004	0	·23	0·9	2·7	2·6	0	1·0	5·0	0·0
,, 17th	46 Crabtree Road	6·4	·000	·003	0	·24	0·9	2·7	2·6	0	1·0	5·0	0·0
,, 17th	47 Cato Street North ...	7·0	·000	·003	0	·23	0·9	2·7	2·6	0	1·0	5·0	0·0
Feb. 17th	"Belvedere" Richm'd Hill Rd.	6·0	·000	·002	0	·20	0·9	2·9	2·6	0	0·8	3·5	0·0
,, 17th	18 Willows Crescent	6·4	·000	·002	0	·20	0·9	2·7	2·6	0	0·8	3·2	0·0
,, 17th	72 Alexandra Road	6·4	·000	·005	0	·21	0·9	2·7	2·6	0	0·8	3·5	0·0
Mar. 9th	385 Gillott Road	6·4	·000	·006	0	·20	1·0	2·9	2·7	0	0·6	3·2	0·0
,, 9th	48 Wenman Street	6·2	·001	·004	0	·20	1·0	2·9	2·6	0	0·6	3·2	0·0
,, 9th	6 Benacre Street	6·6	·000	·004	0	·19	0·9	2·9	2·7	0	0·6	3·2	0·0
April 6th	73 Harborne Road	6·4	·000	·005	0	·17	0·9	3·2	2·8	0	0·5	2·8	0·4
,, 6th	22 Braithwaite Road ...	6·6	·001	·006	0	·17	1·0	3·0	2·9	0	0·4	2·2	0·2
,, 6th	7 Highfield Road	6·8	·000	·007	0	·18	1·0	3·1	2·9	0	0·4	2·4	0·2
May 18th	Knutsford Lodge, Somerset Rd	6·2	·000	·003	0	·14	1·0	3·2	2·8	0	0·2	1·8	0·0
,, 18th	12 St. Paul's Road	6·4	·001	·004	0	·13	1·0	3·1	2·8	0	0·2	1·6	0·0
,, 18th	35 Edmund Road	6·4	·001	·005	0	·14	1·1	3·1	2·8	0	0·4	1·8	0·2
June 22nd	Hazelcroft, Barlow's Road ...	6·2	·000	·006	0	·14	0·8	2·9	2·6	0	0·2	2·0	0·0
d	21 Fulham Road	6·4	·001	·004	0	·15	1·0	3·0	2·6	0	0·2	1·8	0·0
,, 22nd	86 Ralph Road	6·8	·000	·007	0	·14	1·0	3·2	2·7	2	1·0	3·4	1·1

July 10th	48 Calthorpe Road	5·6	·000	·003	0	·15	1·0	2·7	2·5	0	0·6	2·4	0·2
,, 10th	20 Gt. Hampton Street ...	5·8	·000	·002	0	·16	1·0	2·9	2·5	0	0·6	2·0	0·2
,, 10th	64 Rupert Street	6·0	·001	·005	0	·15	1·0	2·7	2·5	0	0·5	2·1	0·1
Aug. 14th	50 Ruston Street	6·2	·000	·004	0	·15	1·0	2·7	2·7	0	0·4	2·8	0·0
,, 14th	9 Graham Street	6·0	·000	·002	0	·14	0·9	2·7	2·6	0	0·4	2·8	0·0
,, 14th	312 Bloomsbury Street ...	6·2	·001	·006	0	·14	1·0	2·9	2·6	0	0·4	2·4	0·0
Sept. 11th	28 Reservoir Road	5·9	·000	·004	0	·18	0·9	3·0	2·6	0	0·6	3·6	0·0
,, 11th	Back 76 George Street West	5·6	·000	·003	0	·19	0·9	2·9	2·6	0	0·6	3·2	0·0
,, 11th	3 Court, Lupin Street ...	5·4	·001	·004	0	·19	0·9	2·7	2·5	0	0·6	3·4	0·0
Oct. 16th	11 Clarendon Road	6·4	·000	·004	0	·19	0·9	2·7	2·5	0	1·0	3·4	0·2
,, 16th	49 Hingeston Street	6·4	·000	·003	0	·18	0·9	2·7	2·6	0	0·8	3·0	0·2
,, 16th	46 St. James' Street... ...	6·4	·000	·003	0	·19	0·9	2·7	2·6	0	0·8	3·2	0·2
Nov. 18th	Back 121 Aberdeen Street ...	6·4	·000	·009	0	·20	0·9	2·7	2·8	0	0·8	3·4	0·2
,, 18th	Springfield Terrace, Spring St.	6·4	·000	·009	0	·20	0·9	2·7	2·8	0	0·8	3·2	0·2
,, 18th	22 Court, Bishop Street ...	6·6	·001	·009	0	·21	1·0	2·8	2·8	0	0·8	3·2	0·2
Dec. 4th	35 Wellington Road	6·8	·000	·010	0	23	0·9	2·7	2·7	0	1·0	3·6	0·2
,, 4th	47 Brighton Road	6·4	·001	·008	0	21	0·9	2·7	2·7	0	0·8	3·4	0·2
,, 4th	Back 47 Gopsal Street ...	6·4	·002	·009	0	20	0·9	2·8	2·6	0	0·8	3·4	0·2
Average Results, 1908 ...		6·3	·006	·005	·0	·18	0 9	2·8	2·7	0·0	0·6	3·0	0·1
,, ,, 1907 ...		7·1	·001	·005	·0	·20	1·0	3·5	3 1	0·0	0·7	3·9	0·1
,, ,, 1906 ..		6·1	·000	·006	·0	·18	1·0	2·8	2·3	0·2	0·8	3·9	0·0
,, ,. 1905 ...		12·3	·001	·008	·0	·19	1·2	7·4	5·3	0·3	0·8	4·2	0 1
,, ,, 1904 ...		28·6	·000	·008	·2	·12	2·1	17·6					

* "0" indicates "clear," "1" indicates "very slightly turbid."

† The colour is expressed in tintometer units. Red with an equal amount of yellow forms *orange*, yellow with an equal amount of blue forms *green*, and equal amounts of the three colours indicate *grey*.

TABLE XIII

RETURN FOR THE PERIOD 1ST JULY, 1907, TO 30TH JUNE, 1908, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE CITY DURING THE SAID PERIOD.

	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns I., II., IV., and V. of the "Vaccination Register" (Birth List Sheets), viz.:					Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of			Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, 6 and 7 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. I.	Col. II.		Col. IV.	Col. V.				
		"Successfully Vaccinated."	"Insusceptible of Vaccination."	"Had Smallpox."	"Number in respect of whom Certificate of conscientious objection have been received."	"Dead, Unvaccinated."	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and cases not having been found.	
1	2	3	4	5	6	7	8	9	10	11
Birmingham Parish ..	7,464	5,565	10	—	86	929	80	89	675	30
Aston Union (within the City)	6,830	5,202	32	—	147	638	89	86	440	196
King's Norton Union (within the City) ..	1,683	1,403	6	—	71	113	21	17	52	0
Total	15,977	12,170	48	—	304	1,680	190	192	1,167	226

Health Department,
The Council House,
Birmingham,
March 1st, 1909.

Mr. Chairman and Gentlemen,

In compliance with the request contained in Minute 1,656, that I should report generally on the subject of Measles prevalence in Birmingham, I beg now to submit such report.

Measles is one of an ever lessening group of diseases of which it may be said that the present methods of prevention are distinctly unsatisfactory. It is of all epidemic diseases the one from which the fewest number of people escape.

In the case of Measles we have to recognise its extreme infectiousness without, as yet, having definite information as to the nature of the infection, *i.e.*, the germ of Measles has not yet been isolated. Our two important methods of dealing with most of the other infections—"Isolation" and "Disinfection" are from one reason or another ineffective for its prevention, and so the disease continues to become epidemic at fairly regular intervals and to cause a mortality among children (often children who appear to be the most robust), which is distressing.

In England and Wales the disease is present in epidemic form in one district or another every year, so that the death rate has an uniformity which does not occur in particular districts.

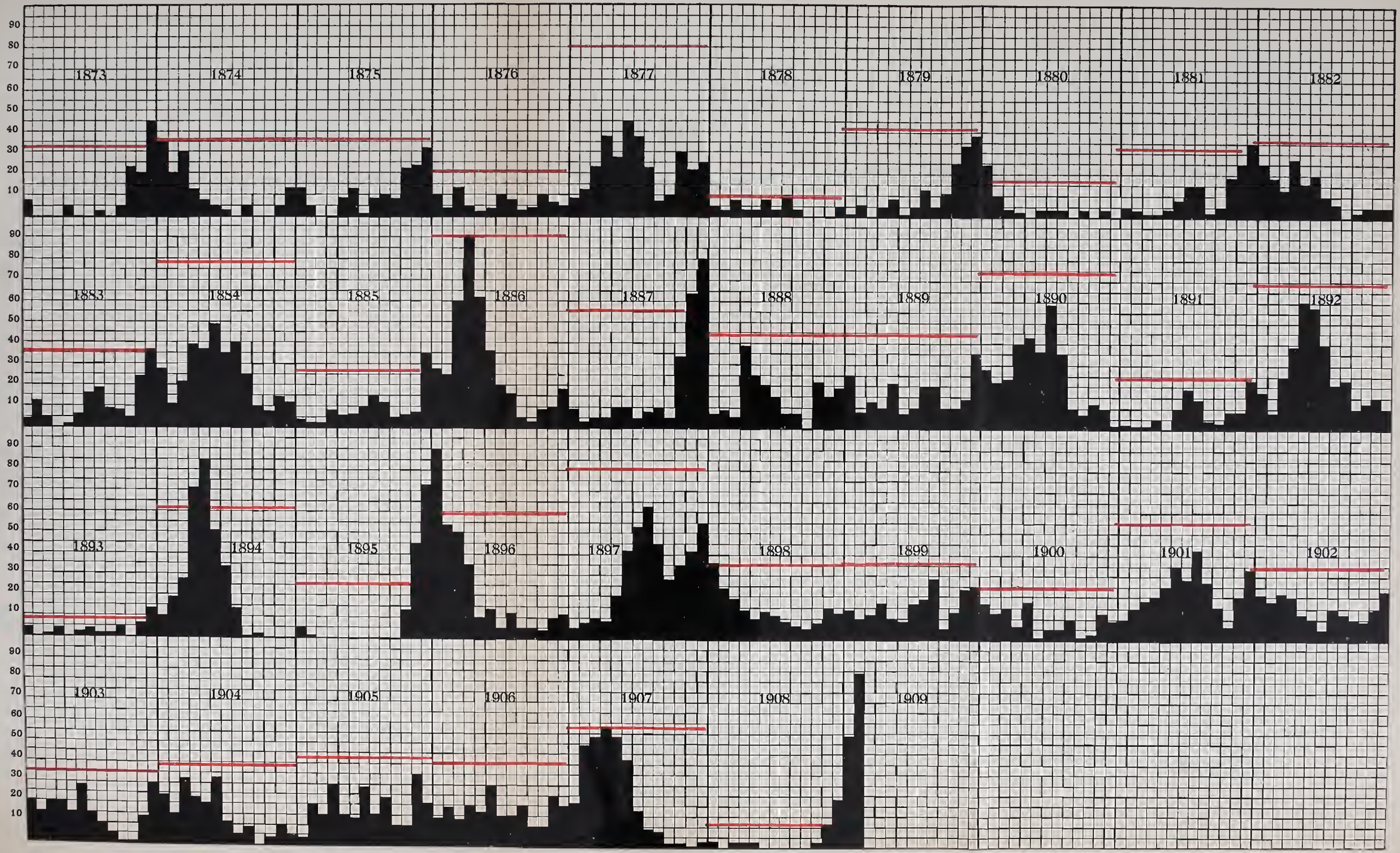
In the following table the mortality rates for England and Wales and for Birmingham are set out in parallel columns for each year and for quinquennial periods since 1873.

TABLE I.

Year.	Measles Mortality Rates per 1,000 Persons.			
	England and Wales.		Birmingham.	
	Annual	Quinquennial.	Annual.	Quinquennial.
1873	·32		·35	
1874	·52		·38	
1875	·26		·38	
1876	·41	·37	·23	·39
1877	.37		·82	
1878	·31		·14	
1879	·36		·43	
1880	·48		·16	
1881	·28	·39	·33	·33
1882	·48		·37	
1883	·35		·38	
1884	·42		·80	
1885	·53		·29	
1886	·44	·47	·92	·60
1887	·60		·56	
1888	·35		·45	
1889	·52		·46	
1890	·44		·76	
1891	·44	·45	·21	·45
1892	·46		·70	
1893	·37		·10	
1894	·39		·64	
1895	·38		·27	
1896	·57	·43	·61	·54
1897	·41		·82	
1898	·42		·36	
1899	·31		·38	
1900	·39		·25	
1901	·28	·33	·57	·38
1902	·39		·35	
1903	·27		·37	
1904	·36		·39	
1905	·32		·44	
1906	·27	·31	·42	·39
1907	·36		·59	
1908	·22		·11	

The mortality rate from Measles probably is not a reliable index of the extent of the prevalence of the disease. Most of the children who die from Measles, die not from the poison of Measles, but from intercurrent diseases such as Pneumonia and Bronchitis. It is generally recognised

CHART I. MEASLES IN BIRMINGHAM, 1873-1909.



The Black Columns represent the Number of Deaths registered as due to MEASLES in four-weekly periods since 1873. The Red Line represents the Mortality Rate per 100,000 per annum.

by the medical profession that much of this intercurrent lung affection can be prevented by proper care during the attack of Measles.

In 40,374 cases of Measles, notified in the City of Aberdeen during the years 1883 to 1902, the number of attacks per 100,000 per annum (average of 20 years) and the case mortality were as follows :—

TABLE II.

	Attack Rate per 100,000.	Case Mortality per cent.
January	192	2·6
February	206	2·8
March	211	4·5
April	94	6·1
May	66	5·0
June	50	3·1
July	40	5·6
August	22	4·7
September	76	·95
October	148	2·5
November	200	3·0
December	233	2·5

In addition, however, to cold as an exciting cause of Pneumonia and Bronchitis in Measles the lungs are in all cases affected by the disease, so that what otherwise may be regarded as trivial exposure to cold has a powerful effect in determining the fatal issue. The virulence of Measles is determined by two widely different causes—the type of the disease itself and the exposure of the patient to even slight chills during the early part of the attack.

As regards the fatality of the disease, epidemics have been recorded where the rate, even in comparatively warm climates, has risen to as high as 80 per cent. of those attacked. Within recent times in our own country the fatality rate has risen to 20 per cent. It usually varies from 2 per cent. to 5 per cent.

In Birmingham no information is available as to the number of those actually attacked by Measles, as cases of sickness are not reported. Some idea may be obtained from the fact that last year it was found that 80 per cent. of the children in eight of the large schools in Birmingham had had Measles before passing from the Infants' Department to the higher department. From this and from other observations it is probably safe to say that from 90 to 95 per cent. of all the children in our public Elementary Schools have had measles by the time they reach the age of 13 years.

Periodicity of the disease. In a few towns where notification of Measles has been in operation it has been found that epidemics follow one another with great regularity at intervals of from 2 to 2½ years. In the chart showing mortality in Birmingham it will be noted that the intervals are not quite regular, as for example the years 1902 to 1906, when the disease was prevalent somewhat continuously rather than in epidemic form.

It has been pointed out that this periodicity is due to the exhaustion of material by an epidemic. So that before another epidemic occurs a fresh lot of susceptible children must be reared.

Age incidence of Measles. In the towns where Measles is a notifiable disease it has been found that the disease attacks children between 1 and 6 years of age at a greater rate than at other ages.

Thus, among 40,374 notified cases the attack rate per 1,000 of the population living at each age was as follows:—

TABLE III.

Age	Attack Rate per 1,000.	Age.	Attack Rate per 1,000.
0—1	43·7	9—10 ...	11·3
1—2	85·6	10—11	6·7
2—3	85·6	11—12	4·5
3—4	79·3	12—13	4·1
4—5	75·4	13—14	2·9
5—6	86·3	14—15	2·6
6—7	75·2	15—25	1·1
7—8	47·3	25—60	·33
8—9	21·0	60 and upwards ...	·03

The fatality rate is on the other hand excessively high in children under 2 years old.

Thus, in the same population, the case mortality per 100 attacks during 20 years was as follows :—

TABLE IV.

Age.	Case Mortality per cent.	Age.	Case Mortality per cent.
Under 1 ...	13·9 %	9—10	·6 %
1—2	10·0 %	10—11	·2 %
2—3	3·4 %	11—12	·0
3—4	1·6 %	12—13	·0 %
4—5	·9 %	13—14	1·2 %
5—6	·7	14—15	·0
6—7	·5 %	15—25	·9
7—8	·5	25—60	·6 %
8—9	·1	60 and over ...	·0

The above figures are of more than statistical importance, they indicate that if the attack of measles can be postponed from infancy to childhood the mortality will be greatly reduced.

The Aberdeen figures, which have been very carefully analysed by Dr. George N. Wilson, show that measles mortality is largely one of class, as indicated by the mortality occurring among those attacked in houses of various sizes. The figures are given in the following table :—

TABLE V.

	No. of Attacks.	No. of Deaths.	Average No. of Inmates.	Percentage Mortality.
One-roomed houses ...	1067	73	4·1	6·8
Two-roomed houses ...	11464	348	5·2	3·0
Three-roomed houses ...	6779	122	5·8	1·8
Four-roomed houses ...	2046	19	6·2	·9
Five or more rooms ...	2675	22	—	·8

The mortality in Birmingham at various ages has been as follows :—

TABLE VI.

	Mortality at Ages in Birmingham.						Total Deaths in 6 years.
	1903	1904	1905	1906	1907	1908	
Under 1 ...	50	47	40	46	81	13	277
1—2 ...	74	75	96	91	109	19	464
2—3 ...	26	37	47	43	60	11	224
3—4 ...	21	18	29	17	32	8	125
4—5 ...	12	11	13	15	23	3	77
5—10 ...	12	17	13	15	17	7	81
Over 10 ...	0	2	1	0	1	2	6

The absence of notification of Measles in Birmingham is the reason why it has been necessary to go elsewhere for the figures in several of the above tables. The facts in Birmingham, as judged by daily experience here, are apparently identical or nearly identical with those in the towns where accurate statistical observation has been possible.

The disease differs from many of the other infectious ailments of children in the extreme diffusibility of the poison. For at least 48 hours before the eruption appears it is infectious. During this stage a child attending a class containing susceptible children will infect a larger number than in the case of any other infectious disease. Such a child will occasionally infect half the susceptible children in the class.

During this early stage both teachers and parents may entirely overlook the nature of the complaint from which the child is suffering unless they are put on the alert by knowing that the child has been exposed to the infection, or that the disease is prevalent in the district.

The eruption on the other hand, as a rule, cannot be well overlooked even by the careless parent. The infection undoubtedly dies very rapidly in fresh air and sunlight, in marked contrast to the infection of many other diseases. Experience shows that after Measles has attacked children in a house, practically all that is required is a thorough cleaning in order to get rid of the infection.

What is being done at present to combat Measles. In the first place the teachers in each elementary school are supplied with postcards by the Health Department on which to report cases of Measles which they may hear of among the children attending their schools. From school attendance officers many more cases are reported, and from the house-to-house visitation by Health Visitors other cases come to our knowledge. During the three months ending February 27th, 2,351 reports were received from these sources of school children who were suffering from Measles. Assuming that the fatality rate during this period was 3 per cent., the number of cases reported in this way will represent about 30 per cent. of the total cases which have occurred in the City.

Everybody willingly co-operates during an epidemic period—on the other hand during inter-epidemic periods the keenness to report cases is not nearly so great.

The present system has two marked drawbacks :—

(*a*) The notifications often reach the Health Office at least a week after the commencement of the illness—too late in many cases for the advice given to be really effective.

(*b*) It is very incomplete, that from all sources representing probably not more than 30 per cent. of the total cases.

The compulsory notification of Measles, with the provision of a certain amount of hospital isolation, has been attempted in several towns, but the results have not proved satisfactory, and in a considerable number of instances notification has been given up. The failure of compulsory notification is said to be due to (*a*) its incompleteness, in many districts not more than 30 or 40 per cent. of the cases being attended by a doctor; (*b*) the expense of providing a staff adequate to deal with sudden outbursts and the enormous expense of providing hospital isolation for cases during epidemic times.

Our present method is probably from the point of view of prevention as satisfactory as compulsory notification. Both, however, are insufficient, as they do not let us know of the existence of every case of the disease in its earliest stage—at the time when effective advice could in a great many cases be given.

When a case of Measles becomes known to the Health Department at a house where some advice will probably be needed, one of the Health Visitors visits in nearly all cases on the same day on which the information is received. Personal advice and instruction are given, and in addition a leaflet of instructions is left with the parents of the patient.

The object of these visits is threefold :—

1. To advise that the patient is so looked after that there will be as little chance as possible of contracting lung complications.

2. To recommend that such precautions shall be taken as will as far as possible prevent other susceptible children in the house contracting the disease, and that if these do contract it the instructions given regarding the first patient shall be applied at once to the later cases.

3. To obtain as accurate information as possible as to the Measles history of each child in the house, so that a report may be made to the school teacher with a view to excluding such children as appears necessary.

The Infants' Departments of our Elementary Schools and other places where similar gatherings of young children occur, undoubtedly play an active part in disseminating the infection of Measles. There is some evidence that the incidence of the disease and the liability to attack is not so great in well-ventilated Infants' Schools as in those where teacher and scholars are accustomed to a close atmosphere. My impression is that this is noticeable in some of the Birmingham schools during inter-epidemic periods, but no statistical confirmation can be given.

The inference to be drawn from Table III. is that so large a number of children have had Measles before reaching the age of nine years that practically all the scholars at our

schools have had the disease by that age, and therefore, the introduction of infection into classes of older children is incapable of harm. The recent decision of the Health Committee to advise admittance of children to school who have themselves had Measles, is based on the fact that, largely, these are the children over nine years of age. The fact that a Measles epidemic rarely if ever occurs among the children of the Upper Departments, even when, as at present, the disease is very prevalent among those in the Infants' Departments, was an additional argument for the decision arrived at. Again, Measles infection is so rarely carried by a third party that the chance of older children carrying infection to school from an infected house (children who themselves are protected by a previous attack) is so extremely small as to be a negligible quantity and to be entirely outweighed by the educational advantages which these children would lose were they excluded.

Obviously there must be great advantage in making parents aware that their children have been exposed to Measles infection at school. By so doing these children, if attacked, may be kept away from school and isolated at home immediately the first symptoms of illness occur. If at the same time a warning is given as to avoiding cold a double purpose will be served. Some time ago, on the suggestion of the Health Committee, the Education Committee instructed the teachers in four of our large Infants' Departments to issue the following notice to the parents of children in any class in which a case of Measles occurred.

"City of Birmingham.

"Education Committee.

.....School,

.....190...

"Sir, or Madam,

"A case of Measles has occurred in the class at the above school in which your child is a scholar. I am desired, on the suggestion of the Medical Officer of Health, to ask you to continue to send your child to school unless any of the early signs of Measles are noticed, such as sneezing, running at the eyes and nose, a general appearance of having caught a cold, and probably a feeling of being out of sorts.

"If you notice any of these signs within the next ten days it will be well to keep your child away from school and in a warm room (preferably in bed) for three days, by which time you will be able to decide whether Measles is going to develop or not.

"It is most important in preventing the spread of Measles that the first signs of the disease should be noted, and the child kept at home.

"The receipt of this notification will not entitle a parent to keep his child away from school without definite reason.

"Yours faithfully,

"....

"Head Teacher."

It was feared that such a notice would alarm parents and cause them to keep their children away from school unnecessarily. Experience has shown that this is not so. If teachers will notify all cases of absence after the issue of such notices so that the cause of absence may be inquired into, there appears to be no reason for any great loss of attendance. The scheme has worked so smoothly that the Health Committee has recently recommended its general adoption by the Education Committee. If successful, it is hoped that the general use of these notices will delay epidemics and thereby reduce the mortality from Measles.

School closure or closure of the Infants' Department as now practised has been proved to be ineffective in staying the progress of an epidemic of Measles in a school. Possibly some good result might be obtained were the whole department closed on the occurrence of the first case, but obviously this is on educational grounds impracticable.

Closure of particular classes for about five days at the time when the second crop of Measles cases is expected has been advocated; but in addition to the dislocation caused by such frequent closures, I do not think this method has the advantages of the method already recommended of issuing notices to the parents of the children of the class in which the first case occurs.

In conclusion, I desire to submit that the lessening of the mortality from measles is mainly to be expected from the attention given by the Health Visitors and others in instructing parents in the method of warding off dangerous complications. Largely it is to educational methods that we must

look. As has already been pointed out, and as illustrated by Table V., the disease is one which is vastly more fatal among the poorer classes than among the middle classes, where the children are more intelligently cared for. I consider, therefore, that while it may be possible to delay epidemics to some extent, and thereby reduce the mortality, by means of the warning notices referred to above, the greater effect in reducing mortality will result from continuing and even increasing those methods which have for their object the instruction of parents of the poorer classes. With this object of instruction in view it may be possible to improve the warning notice, which it is hoped will shortly be used at all the Infants' Departments of our Birmingham Schools.

Believe me, Gentlemen,

Your obedient Servant,

JOHN ROBERTSON.